



## DEPARTMENT OF THE INTERIOR

### Fish and Wildlife Service

#### 50 CFR Part 17

[Docket No. FWS–R2–ES–2019–0019; FF09E21000 FXES11110900000 212]

RIN 1018-BD29

### Endangered and Threatened Wildlife and Plants; Endangered Species Status for the Peppered Chub and Designation of Critical Habitat

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Proposed rule.

**SUMMARY:** We, the U.S. Fish and Wildlife Service (Service), announce a 12-month finding on a petition to list the peppered chub (*Macrhybopsis tetranema*) as endangered or threatened under the Endangered Species Act of 1973, as amended (Act). The peppered chub is a freshwater fish historically found in Colorado, Kansas, New Mexico, Oklahoma, and Texas, and is now extirpated in all but approximately 6 percent of its historical range. After review of the best available scientific and commercial information, we find that listing the peppered chub is warranted due to a dramatic reduction in the species' range (a loss of all but one population) and the low resiliency level of the remaining population. The primary stressors affecting the peppered chub are habitat fragmentation and degradation resulting from several sources, as discussed in this document and its supporting materials. Because we have found the species is at risk of extinction, we propose to list the peppered chub as an endangered species under the Act. If we finalize this rule as proposed, it would add this species to the List of Endangered and Threatened Wildlife and extend the Act's protections to the species. We also propose to designate critical habitat for the peppered chub under the Act. The proposed critical habitat designation includes approximately 1,068 river miles (1,719 river

kilometers) in four units in Kansas, New Mexico, Oklahoma, and Texas. We announce the availability of a draft economic analysis of the proposed critical habitat designation.

**DATES:** We will accept comments received or postmarked on or before **[INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

Comments submitted electronically using the Federal eRulemaking Portal (see **ADDRESSES**, below) must be received by 11:59 p.m. Eastern Time on the closing date. We must receive requests for public hearings, in writing, at the address shown in **FOR FURTHER INFORMATION CONTACT** by **[INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

**ADDRESSES:** You may submit comments by one of the following methods:

(1) *Electronically:* Go to the Federal eRulemaking Portal:

*<http://www.regulations.gov>*. In the Search box, enter FWS–R2–ES–2019–0019, which is the docket number for this rulemaking. Then, click on the Search button. On the resulting page, in the Search panel on the left side of the screen, under the Document Type heading, check the Proposed Rule box to locate this document. You may submit a comment by clicking on “Comment Now!”

(2) *By hard copy:* Submit by U.S. mail to: Public Comments Processing, Attn: FWS–R2–ES–2019–0019, U.S. Fish and Wildlife Service, MS: PRB/3W, 5275 Leesburg Pike, Falls Church, VA 22041–3803.

We request that you send comments only by the methods described above. We will post all comments on *<http://www.regulations.gov>*. This generally means that we will post any personal information you provide us (see *Public Comments*, below, for more information).

**FOR FURTHER INFORMATION CONTACT:** Debra Bills, Field Supervisor, U.S. Fish and Wildlife Service, Arlington Ecological Services Field Office, 2005 Northeast Green Oaks Boulevard, Suite 140, Arlington, TX 76006; telephone 817-277-1100.

Persons who use a telecommunications device for the deaf (TDD) may call the Federal Relay Service at 800–877–8339.

## **SUPPLEMENTARY INFORMATION:**

### **Executive Summary**

*Why we need to publish a rule.* Under the Act, if we determine that a species may be an endangered or threatened species throughout all or a significant portion of its range, we are required to promptly publish a proposal in the *Federal Register* and make a determination on our proposal within 1 year. To the maximum extent prudent and determinable, we must designate critical habitat for any species that we determine to be an endangered or threatened species under the Act. Listing a species as an endangered or threatened species and designation of critical habitat can only be completed by issuing a rule.

*What this document does.* We propose to list the peppered chub as an endangered species under the Act, and we propose the designation of critical habitat for the species.

*The basis for our action.* Under the Act, we may determine that a species is an endangered or threatened species based on any of five factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence. We are also required to consider any conservation measures made by any State or foreign nation regarding the species. We have determined that habitat degradation and fragmentation (Factor A), resulting from altered flow regimes, impoundments and other stream fragmentation, adversely modified geomorphology, decreased water quality, and the introduction and proliferation of invasive species (aquatic and vegetative), pose the largest risk to the viability of the species. Changes in the hydrological regime are primarily related to

habitat changes: the loss of flowing water, instream habitat fragmentation, disconnection of the floodplain, and impairment of water quality. The effects of climate change (Factor E) may be exacerbating habitat degradation and fragmentation. Although habitat degradation and fragmentation are the primary stressor to the peppered chub, *Risk Factors for Peppered Chub*, below, presents a broader discussion of the threats. We have found that there are no existing regulatory mechanisms that adequately reduce the threats acting on the species to sufficiently reduce the risk of extinction (Factor D). We are aware of no other conservation efforts at this time that sufficiently reduce the risk of extinction. The Service, State, and academic partners are conducting monitoring efforts, and plans for captive propagation efforts are underway.

Section 4(a)(3) of the Act requires the Secretary of the Interior (Secretary) to designate critical habitat concurrent with listing to the extent prudent and determinable. Section 3(5)(A) of the Act defines critical habitat as (i) the specific areas within the geographical area occupied by the species, at the time it is listed, on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protections; and (ii) specific areas outside the geographical area occupied by the species at the time it is listed, upon a determination by the Secretary that such areas are essential for the conservation of the species. Section 4(b)(2) of the Act states that the Secretary will make the designation on the basis of the best available scientific data after taking into consideration the economic impact, the impact on national security, and any other relevant impacts of specifying any particular area as critical habitat.

*Peer Review.* In accordance with our joint policy on peer review published in the *Federal Register* on July 1, 1994 (59 FR 34270), and our August 22, 2016, memorandum updating and clarifying the role of peer review of listing actions under the Act, we sought the expert opinions of seven appropriate specialists regarding the species status

assessment report, which informed this proposed rule. The purpose of peer review is to ensure that the science behind our listing and critical habitat designations is based on scientifically sound data, assumptions, and analyses. Although we made several attempts to obtain responses from the peer reviewers, we did not receive a review from any of them. We received review from eight experts outside the Service (State and academic), who also collaborated with our species status assessment team during the species status assessment process, so they cannot be considered totally independent peer reviewers. Consequently, we are reengaging with the existing peer reviewers, and others as needed, to gain additional expert review and will consider any comments received, as appropriate, before a final agency determination.

Because we will consider all comments and information we receive during the comment period, our final determinations may differ from this proposal. Based on the new information we receive (and any comments on that new information), we may conclude that the species is threatened instead of endangered, or we may conclude that the species does not warrant listing as either an endangered species or a threatened species. Such final decisions would be a logical outgrowth of this proposal, as long as we: (1) base the decisions on the best scientific and commercial data available after considering all of the relevant factors; (2) do not rely on factors Congress has not intended us to consider; and (3) articulate a rational connection between the facts found and the conclusions made, including why we changed our conclusion.

### **Information Requested**

#### *Public Comments*

We intend that any final action resulting from this proposed rule will be based on the best scientific and commercial data available and be as accurate and as effective as possible. Therefore, we request comments or information from other concerned governmental agencies, Native American tribes, the scientific community, industry, or

any other interested parties concerning this proposed rule. We particularly seek comments concerning:

(1) The species' biology, range, and population trends, including:

(a) Biological or ecological requirements of the species, including habitat requirements for feeding, breeding, and sheltering;

(b) Genetics and taxonomy;

(c) Historical and current range, including distribution patterns;

(d) Historical and current population levels, and current and projected trends; and

(e) Past and ongoing conservation measures for the species, its habitat, or both.

(2) Factors that may affect the continued existence of the species, which may include habitat modification or destruction, overutilization, disease, predation, the inadequacy of existing regulatory mechanisms, or other natural or manmade factors.

(3) Biological, commercial trade, or other relevant data concerning any threats (or lack thereof) to the species and existing regulations that may be addressing those threats.

(4) Additional information concerning the historical and current status, range, distribution, and population size of the species, including the locations of any additional populations.

(5) The reasons why we should or should not designate habitat as "critical habitat" under section 4 of the Act (16 U.S.C. 1531 *et seq.*), including information to inform the following factors such that a designation of critical habitat may be determined to be not prudent:

(a) The species is threatened by taking or other human activity and identification of critical habitat can be expected to increase the degree of such threat to the species;

(b) The present or threatened destruction, modification, or curtailment of a species' habitat or range is not a threat to the species, or threats to the species' habitat

stem solely from causes that cannot be addressed through management actions resulting from consultations under section 7(a)(2) of the Act;

(c) Areas within the jurisdiction of the United States provide no more than negligible conservation value, if any, for a species occurring primarily outside the jurisdiction of the United States; or

(d) No areas meet the definition of critical habitat.

(6) Specific information on:

(a) The amount and distribution of peppered chub habitat;

(b) What areas, that were occupied at the time of listing (*i.e.*, are currently occupied) and that contain the physical or biological features essential to the conservation of the species, should be included in the designation and why;

(c) Special management considerations or protection that may be needed in critical habitat areas we are proposing, including managing for the potential effects of climate change; and

(d) What areas not occupied at the time of listing are essential for the conservation of the species. We particularly seek comments regarding:

(i) Regarding whether occupied areas are adequate for the conservation of the species; and,

(ii) Providing specific information regarding whether or not unoccupied areas would, with reasonable certainty, contribute to the conservation of the species and, contain at least one physical or biological feature essential to the conservation of the species.

(7) Land use designations and current or planned activities in the subject areas and their possible impacts on proposed critical habitat.

(8) Any probable economic, national security, or other relevant impacts of designating any area that may be included in the final designation, and the benefits of including or excluding areas that may be impacted.

(9) Information on the extent to which the description of probable economic impacts in the draft economic analysis is a reasonable estimate of the likely economic impacts.

(10) Information on land ownership within proposed critical habitat areas, particularly tribal land ownership (allotments, trust, and/or fee) so that the Service may best implement Secretarial Order 3206 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act).

(11) Whether any specific areas we are proposing for critical habitat designation should be considered for exclusion under section 4(b)(2) of the Act, and whether the benefits of potentially excluding any specific area outweigh the benefits of including that area under section 4(b)(2) of the Act. Specific information we seek includes:

(a) The extent to which the existing State critical habitat designation in Kansas provides for the conservation of the species and its habitat in that State;

(b) The effectiveness of the management plan for the Arkansas River shiner (*Notropis girardi*) for the Canadian River from U.S. Highway 54 at Logan, New Mexico, to Lake Meredith, Texas, in providing conservation for the peppered chub in Texas; and

(c) Information on any other conservation plans within the proposed designated critical habitat areas that provide conservation for the peppered chub and its habitat.

(12) Whether we could improve or modify our approach to designating critical habitat in any way to provide for greater public participation and understanding, or to better accommodate public concerns and comments.

(13) Ongoing or proposed conservation efforts which could result in direct or indirect ecological benefits to the associated habitat for the proposed species; as such



those efforts would lend to the recovery of the species and therefore areas covered may be considered for exclusion from the final critical habitat designation.

Please include sufficient information with your submission (such as scientific journal articles or other publications) to allow us to verify any scientific or commercial information you include.

Please note that submissions merely stating support for, or opposition to, the action under consideration without providing supporting information, although noted, will not be considered in making a determination, as section 4(b)(1)(A) of the Act directs that determinations as to whether any species is an endangered or a threatened species must be made “solely on the basis of the best scientific and commercial data available.”

You may submit your comments and materials concerning this proposed rule by one of the methods listed in **ADDRESSES**. We request that you send comments only by the methods described in **ADDRESSES**.

If you submit information via <http://www.regulations.gov>, your entire submission—including any personal identifying information—will be posted on the website. If your submission is made via a hardcopy that includes personal identifying information, you may request at the top of your document that we withhold this information from public review. However, we cannot guarantee that we will be able to do so. We will post all hardcopy submissions on <http://www.regulations.gov>.

Comments and materials we receive, as well as supporting documentation we used in preparing this proposed rule, will be available for public inspection on <http://www.regulations.gov>.

#### *Public Hearing*

Section 4(b)(5) of the Act provides for a public hearing on this proposal, if requested. Requests must be received by the date specified above in **DATES**. Such requests must be sent to the address shown in **FOR FURTHER INFORMATION**

**CONTACT.** We will schedule a public hearing on this proposal, if requested, and announce the date, time, and place of the hearing, as well as how to obtain reasonable accommodations, in the *Federal Register* and local newspapers at least 15 days before the hearing. For the immediate future, we will provide these public hearings using webinars that will be announced on the Service's website, in addition to the *Federal Register*. The use of these virtual public hearings is consistent with our regulations at 50 CFR 424.16(c)(3).

### **Previous Federal Actions**

Forest Guardians (now WildEarth Guardians) petitioned us to list *Macrhybopsis tetranema* in 2007. The Service published a 90-day finding on December 16, 2009 (74 FR 66866) determining that the petition contained substantial information that listing *Macrhybopsis tetranema* (with a common name in that document of Arkansas River speckled chub) may be warranted. This proposed listing rule also constitutes our 12-month petition finding for the species.

### **Supporting Documents**

A species status assessment (SSA) team prepared an SSA report for the peppered chub. The SSA team was composed of Service biologists, in consultation with other species experts. The SSA report represents a compilation of the best scientific and commercial data available concerning the status of the species, including the impacts of past, present, and future factors (both negative and beneficial) affecting the species. The Service sent the SSA report to seven independent peer reviewers; however, no peer reviewer provided a review of the document. The Service also sent the SSA report to 21 partners, including scientists with expertise in fish biology, habitat management, and stressors (factors negatively affecting the species) to the species, for review. We received review from eight (five State and three academic) partners.

### *Availability of Supporting Materials*

For the proposed listing of the peppered chub, the SSA report and other materials relating to this proposal can be found on the Arlington Ecological Services Field Office website at <https://www.fws.gov/southwest/es/ArlingtonTexas/> and at <http://www.regulations.gov> under Docket No. FWS–R2–ES–2019–0019.

For the proposed critical habitat designation, the coordinates or plot points or both from which the maps are generated are included in the administrative record and are available at <https://www.fws.gov/southwest/es/ArlingtonTexas/> and at <http://www.regulations.gov> under Docket No. Docket No. FWS–R2–ES–2019–0019.

Any additional tools or supporting information that we may develop for the critical habitat designation will also be available at the Service website set out above, and may also be included in the preamble of this proposal and/or at <http://www.regulations.gov>.

## **I. Proposed Listing Determination**

### **Background**

The peppered chub is historically known throughout the Arkansas River basin in Colorado, Kansas, New Mexico, Oklahoma, and Texas. Peppered chub were typically found in main channels of wide, shallow, sandy-bottomed rivers. The species prefers shallow channels where currents flow over clean fine sand, and generally, adults avoid calm waters and silted stream bottoms. Peppered chub have adapted to tolerate the adverse conditions of the drought-prone prairie streams that they inhabit. The peppered chub is a small cyprinid minnow with a fusiform (tapering at both ends) body shape rapidly tapering to a conical head. It has a nearly transparent slender body with dark dots scattered on its back. Generally, adult fish reach a maximum length of 3 inches (in) (77 millimeters (mm)) and do not live beyond 2 years. A full description of the species and its habitat can be found in chapter 2 of the SSA report.

Gilbert first described the peppered chub in 1886 (pp. 208–209). Prior to Eisenhour’s 1999 dissertation (published 2004), the peppered chub was classified as one

of six subspecies within the *Macrhybopsis aestivalis* (commonly: speckled chub) complex. Eisenhour examined morphometrics (measurements of external shape), meristics (counts of features of fish), pigmentation, and tuberculation across the range of the complex. He concluded that the results supported the recognition of five individual species, including *Macrhybopsis tetranema*, or peppered chub. The American Fisheries Society also accepts the species as the peppered chub (Page *et al.* 2013, p. 28).

Habitat for the peppered chub historically consisted of the main channels of wide, shallow, sandy-bottomed rivers and larger streams of the Arkansas River basin, with a noted preference for river segments nearer the headwaters, as compared to other *Macrhybopsis* in the Arkansas River basin. Adults prefer shallow channels where currents flow over clean fine sand, and generally avoid calm waters and silted river bottoms. Peppered chub have key adaptations that enable them to tolerate the adverse conditions of the drought-prone prairie rivers that they inhabit, including a relatively high capacity to endure elevated temperatures and low dissolved oxygen concentrations. They also appear to be often associated with turbid waters.

Peppered chub are members of a reproductive guild that broadcast-spawn semibuoyant eggs, which remain suspended in the water column by the current until hatching. This reproductive strategy appears to be an adaptation to highly variable environments where stream flows are unpredictable and suspended sediment deposition can cover eggs laid in nests or crevices. Without continuous stream flow of sufficient distance, eggs sink to the bottom where they may be covered with silt and suffocate due to the lack of oxygen. In addition to adequate stream discharge, an appropriate reach length is also needed to allow the time necessary for egg and larval development into a motile, free-swimming stage. After hatching, flowing water provides the extended development time needed by larval fish. Larval fish may require strong currents to keep

them suspended in the water column until they are capable of horizontal movement and until the fish are strong enough to leave the main channel.

## **Regulatory and Analytical Framework**

### *Regulatory Framework*

Section 4 of the Act (16 U.S.C. 1533) and its implementing regulations (50 CFR part 424) set forth the procedures for determining whether a species is an “endangered species” or a “threatened species.” The Act defines an endangered species as a species that is “in danger of extinction throughout all or a significant portion of its range,” and a threatened species as a species that is “likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.” The Act requires that we determine whether any species is an “endangered species” or a “threatened species” because of any of the following factors:

- (A) The present or threatened destruction, modification, or curtailment of its habitat or range;
- (B) Overutilization for commercial, recreational, scientific, or educational purposes;
- (C) Disease or predation;
- (D) The inadequacy of existing regulatory mechanisms; or
- (E) Other natural or manmade factors affecting its continued existence.

These factors represent broad categories of natural or human-caused actions or conditions that could have an effect on a species’ continued existence. In evaluating these actions and conditions, we look for those that may have a negative effect on individuals of the species, as well as other actions or conditions that may ameliorate any negative effects or may have positive effects.

We use the term “threat” to refer in general to actions or conditions that are known to or are reasonably likely to negatively affect individuals of a species. The term

“threat” includes actions or conditions that have a direct impact on individuals (direct impacts), as well as those that affect individuals through alteration of their habitat or required resources (stressors). The term “threat” may encompass—either together or separately—the source of the action or condition or the action or condition itself.

However, the mere identification of any threat(s) does not necessarily mean that the species meets the statutory definition of an “endangered species” or a “threatened species.” In determining whether a species meets either definition, we must evaluate all identified threats by considering the expected response by the species, and the effects of the threats—in light of those actions and conditions that will ameliorate the threats—on an individual, population, and species level. We evaluate each threat and its expected effects on the species, then analyze the cumulative effect of all of the threats on the species as a whole. We also consider the cumulative effect of the threats in light of those actions and conditions that will have positive effects on the species, such as any existing regulatory mechanisms or conservation efforts. The Secretary determines whether the species meets the definition of an “endangered species” or a “threatened species” only after conducting this cumulative analysis and describing the expected effect on the species now and in the foreseeable future.

The Act does not define the term “foreseeable future,” which appears in the statutory definition of “threatened species.” Our implementing regulations at 50 CFR 424.11(d) set forth a framework for evaluating the foreseeable future on a case-by-case basis. The term “foreseeable future” extends only so far into the future as the Services can reasonably determine that both the future threats and the species’ responses to those threats are likely. In other words, the foreseeable future is the period of time in which we can make reliable predictions. “Reliable” does not mean “certain”; it means sufficient to provide a reasonable degree of confidence in the prediction. Thus, a prediction is reliable if it is reasonable to depend on it when making decisions.

It is not always possible or necessary to define foreseeable future as a particular number of years. Analysis of the foreseeable future uses the best scientific and commercial data available and should consider the timeframes applicable to the relevant threats and to the species' likely responses to those threats in view of its life-history characteristics. Data that are typically relevant to assessing the species' biological response include species-specific factors such as lifespan, reproductive rates or productivity, certain behaviors, and other demographic factors.

#### *Analytical Framework*

The SSA report documents the results of our comprehensive biological review of the best scientific and commercial data regarding the status of the species, including an assessment of the potential threats to the species. The SSA report does not represent a decision by the Service on whether the species should be proposed for listing as an endangered or threatened species under the Act. It does, however, provide the scientific basis that informs our regulatory decisions, which involve the further application of standards within the Act and its implementing regulations and policies. The following is a summary of the key results and conclusions from the SSA report; the full SSA report can be found at <https://www.fws.gov/southwest/es/ArlingtonTexas/> and at <http://www.regulations.gov> under Docket No. FWS–R2–ES–2019–0019.

To assess peppered chub viability, we used the three conservation biology principles of resiliency, redundancy, and representation (Shaffer and Stein 2000, pp. 306–310). Briefly, resiliency supports the ability of the species to withstand environmental and demographic stochasticity (for example, wet or dry, warm or cold years), redundancy supports the ability of the species to withstand catastrophic events (for example, droughts, large pollution events), and representation supports the ability of the species to adapt over time to long-term changes in the environment (for example, climate changes). In general, the more resilient and redundant a species is and the more representation it

has, the more likely it is to sustain populations over time, even under changing environmental conditions. Using these principles, we identified the species' ecological requirements for survival and reproduction at the individual, population, and species levels, and described the beneficial and risk factors influencing the species' viability.

The SSA process can be categorized into three sequential stages. During the first stage, we evaluated the individual species' life-history needs. The next stage involved an assessment of the historical and current condition of the species' demographics and habitat characteristics, including an explanation of how the species arrived at its current condition. The final stage of the SSA involved making predictions about the species' responses to positive and negative environmental and anthropogenic influences. Throughout all of these stages, we used the best available information to characterize viability as the ability of a species to sustain populations in the wild over time. We use this information to inform our regulatory decision.

### **Summary of Biological Status and Threat**

In this discussion, we review the biological condition of the species and its resources, and the threats that influence the species' current and future condition, in order to assess the species' overall viability and the risks to that viability.

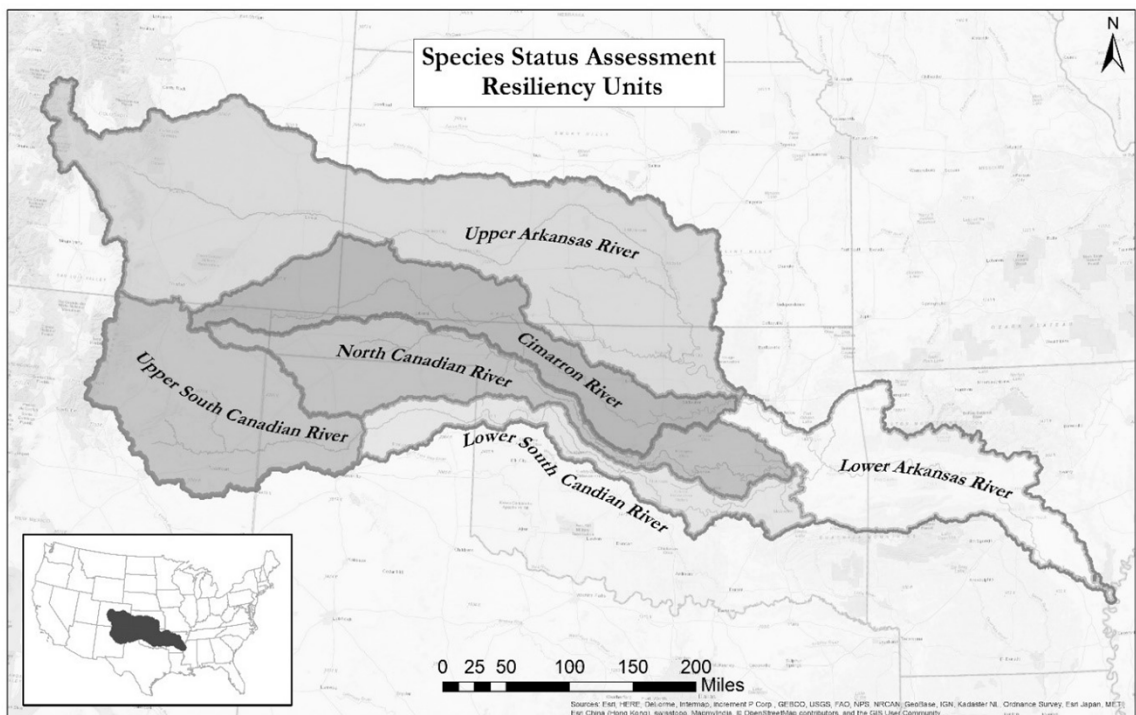
#### *Summary of Analysis*

A full description of our analysis (analytical methods, threats, current condition, and future condition for the peppered chub can be found in the SSA report (Service 2018); below, we present a summary of the results of the SSA.

To evaluate the current and future viability of the peppered chub, we assessed a range of conditions to allow us to consider the species' resiliency, representation, and redundancy. The peppered chub historically inhabited numerous rivers of the Arkansas River basin, and without the presence of dams or other structures, it is likely that individuals within populations exhibited some level of genetic exchange among these



ivers. To analyze population-level resiliency, we divided the range of the peppered chub into five “resiliency units” or populations (we use those terms interchangeably in this document) (see figure below; we do not include the Lower Arkansas River in the resiliency units for the SSA for the peppered chub because that portion of the watershed is not part of the historical range of the species). We described population resiliency and assessed representation and redundancy among these units. However, to assess conditions within each resiliency unit at a somewhat finer scale, we subdivided each resiliency unit into multiple subunits. This downscaling allows us to compare differences in conditions within a given resiliency unit and to understand the drivers affecting current condition (see the SSA report for further details).



**Figure of Resiliency Units (excluding Lower Arkansas River) for the Arkansas River Shiner and Peppered Chub Species Status Assessment.**

To assess resiliency (within each resiliency unit), we analyzed capture ratios, probability of capture trends, and relative abundance (demographic factors). We also analyzed habitat factors that were determined to have the most influence on the species:

stream fragment length, channel narrowing, flood frequency, hydroperiod (changes to the annual hydrograph most relevant to the species' lifecycle), and low flow conditions (habitat/flow factors). Overall resiliency unit condition rankings were determined by combining the three demographic factors and five habitat/flow factors. For a more detailed description of the conditions categories, see Tables 1 and 2, below, and find full descriptions of each factor analysis in the SSA report.

**Table 1. Demographic factors used to create condition categories for the resiliency assessment of peppered chub (PC).**

<b>Condition Category</b>	<b>Capture Ratio</b>	<b>Probability of Capture Trend</b>	<b>Relative Abundance</b>
<i>Null (0)</i> (factor no longer measurable)	No PC captured	No PC captured	No PC captured
<i>Poor</i>	0.18 or less	Declining	Less than 3%
<i>Fair</i>	0.19 to 0.74	N/A	3 to 10%
<i>Good</i>	0.75 or greater	Stable or increasing	Greater than 11%

**Table 2. Habitat factors used to create condition categories for the resiliency assessment of peppered chub (PC).**

<b>Condition category</b>	<b>Stream Fragment Length</b>	<b>Channel Narrowing<sup>1</sup></b>	<b>Flood Frequency Analysis<sup>2</sup></b>	<b>Hydroperiod<sup>3</sup></b>	<b>Low Flow Conditions<sup>4</sup></b>
<i>Null</i>	Less than 63 river miles (pelagic extirpation)	Greater than 90% loss of channel area; less than 10 acres per mile	Less than 10%	Greater than a 90% decrease	
<i>Poor</i>	64 to 126 river miles (between pelagic extirpation and species threshold)	50 to 89% loss of channel area; 10 to 49 acres per mile	Between 10 and 50%	Between a 25 and 90% decrease	Increasing pattern or high frequency
<i>Fair</i>	127 to 185 river miles (above the PC's needs threshold, but below the combined pelagic broadcast-spawning threshold)	25 to 50% loss of channel area; 50 to 99 acres per mile	Between 50 and 75%	Between a 10 and 25% decrease	Cyclical pattern
<i>Good</i>	Greater than 185 river miles (no extirpation of pelagic broadcast-spawning fishes anticipated, based on fragment length alone)	24% or less loss of channel area; 100 or more acres per mile	Greater than 75%	From a positive gain to a 10% decrease	Decreasing pattern or low frequency

<sup>1</sup> Loss of channel area is measured since the 1950s.

<sup>2</sup> Flood frequency analysis is the weighted sum of the proportional differences for the 2-, 5-, and 10-year events between pre- and post-impoundment.

<sup>3</sup> Hydroperiod is the percent difference in stream discharge (mean daily, March-November) between pre- and post-impoundment.

<sup>4</sup> Low flow conditions are measured in the number of days of less than 0.57 cubic meters per second (m<sup>3</sup>/s) (20 cubic feet per second (ft<sup>3</sup>/s)).

Maintaining representation in the form of genetic or ecological diversity is important to maintain the peppered chub's capacity to adapt to future environmental changes. The peppered chub must retain populations throughout its range to maintain the overall potential genetic and life-history attributes that can buffer the species' response to environmental changes over time. We define redundancy for the peppered chub as multiple, resilient populations (resiliency units) distributed throughout the species' historical range. Thus, multiple, resilient populations (or resiliency units), coupled with a relatively broad distribution, contribute to species-level viability.

#### *Current Condition of Peppered Chub*

Our analysis of current condition of the peppered chub is based on numerous scientific publications from species experts who concluded that by the year 2000, the peppered chub had significantly declined and was isolated to the Ninnescah River in Kansas and the South Canadian River between Ute Reservoir in New Mexico and Lake Meredith in the Texas panhandle (Luttrell et al. 1999, p. 983; Eisenhour 1999, p. 975; Eisenhour 2004; Service 2018, pp. 53-57). More recently, we assessed the current condition using survey efforts from 1,826 collections (from 2013 to 2017) with only 38 of those (2 percent) containing the peppered chub. Extensive recent survey efforts show that the peppered chub distribution is currently limited to the South Canadian River between Ute Reservoir in New Mexico and Lake Meredith in the Texas panhandle, which represents 6 percent of its historical range. The ratio of positive to negative peppered chub surveys in the Upper South Canadian River dropped to 45 percent and peppered chubs were not collected in the Ninnescah River during this time.

Historically, the peppered chub was known from five populations found in Colorado, Kansas, New Mexico, Oklahoma, and Texas. Several factors were responsible for the extirpation of the peppered chub in each of the resiliency units. However, habitat degradation and fragmentation has been primarily a result of water diversion and

impoundments (*i.e.*, dams). Thus, the single remaining population has low resiliency (see Table 3, below).

We consider the peppered chub to have limited representation in the form of genetic and ecological diversity because only a single functioning population remains. Extirpated populations of peppered chub contained genetic and morphological variation that have been lost. As described in Osborne (2017, p. 9), the peppered chub has “considerable stocks of genetic diversity” within this single population; however, the species lacks the representation of species with multiple populations occurring across varying landscapes. Despite restrictions of its range due to impoundments and other habitat alterations, and a decline in abundance, it is possible that genetic variation is sufficient to allow for survival in the naturally occurring conditions of the arid prairie stream environments in which the species evolved. However, it is unknown if this species has the genetic variability or the time required to adapt to continuing habitat and flow alterations.

**Table 3. Current resiliency of the peppered chub.**

	Demographic Factors			Habitat Factors					Current Resiliency
	Capture Ratio	Probability of Capture Trend	Relative Abundance	Stream Fragment Length	Channel Narrowing	Flood Frequency	Hydroperiod	Low Flow	
<b>Upper Arkansas</b> (includes Ninnescah and Salt Fork)	Ø	Ø	Ø	Fair	Fair to Good	Poor & Good	Poor & Good	Poor & Good	Ø
<b>Cimarron</b>	Ø	Ø	Ø	Good	Null to Good	Null & Fair	Poor & Fair	Poor & Good	Ø
<b>North Canadian</b>	Ø	Ø	Ø	Fair	Null	Null to Good	Poor to Fair	Poor to Good	Ø
<b>Lower South Canadian</b>	Ø	Ø	Ø	Good	Null to Good	Poor to Fair	Poor to Fair	Fair & Good	Ø
<b>Upper South Canadian</b>	Fair	Good	Poor	Fair	Poor	Null to Fair	Null to Fair	Poor to Fair	Low

Note: The Ø symbol means null (having or associated with the value zero).

Because the peppered chub has been extirpated from all but one resiliency unit, it has a higher risk of extinction from a catastrophic event, due to a lack of redundancy across its range, compared to historical conditions.

See the SSA report for the complete current condition analysis for the peppered chub (Service 2018).

#### *Risk Factors for Peppered Chub*

Stressors affecting the viability of the peppered chub include altered flow regimes (Factor A), impoundments and other stream fragmentation (Factor A), modified geomorphology (Factor A), decreased water quality (Factor A) and the introduction of invasive species (Factors A and C). The source of many of these stressors is related to the construction of dams and their impoundments (a body of water confined within an enclosure) which, in most cases, has drastically altered the natural flow regime and fragmented habitat. For example, a U.S. Geological Survey (USGS) stream gage on the Canadian River (near Amarillo, Texas) in the Lower South Canadian River resiliency unit has had a 69 percent decline in mean hydroperiod from pre-impoundment to post-impoundment, and the mean daily discharge (post-impoundment) is markedly lower (68% decline) since the completion of the reservoir.

#### *Altered Flow Regimes*

Peppered chub need a combination of varying flows (timing, duration, and magnitude) to support viable populations and maintain suitable habitat. Low flow periods (including isolated pooling) can impair or eliminate appropriate habitat for the species, and while adult peppered chub are adapted to and can typically survive these events for a short time, populations that regularly experience these conditions face compromised reproductive success and may not persist. Flow regime alterations that we considered during the SSA process include dams and their associated impoundments, the effects dams have on the natural flow regime, surface and groundwater extraction, and the effect

of climate change on precipitation and drought.

### *Stream Fragmentation*

Dams often fragment aquatic habitat and create impassable physical barriers to fish movement. Juvenile and adult peppered chub would likely be capable of passing downstream through small fish barriers such as weirs (low dams built to raise the level of water upstream), low-water crossings, and natural or manmade falls. However, no life stage of peppered chub is likely capable of successfully passing downstream through most reservoirs large enough to act as water supply or hydroelectric sources. Likewise, due to the small size and limited swimming ability of the peppered chub, upstream movement of adults (during spawning) would likely be prohibited by any impoundments (regardless of type or function), weirs, falls, pipeline reinforcements structures, and some low-water crossings.

It is unlikely that egg and larval stages of peppered chub are capable of passing over a fish barrier. When fish (typically adults only) pass downstream of a smaller barrier, they remain isolated below the barrier and are unable to return to spawning areas upstream. This often results in incremental and progressive extirpation from an upstream to downstream direction (Perkin and Gido 2011, p. 374). Because of its need for flowing water to reproduce, peppered chub have been eliminated from shorter (generally less than 136 mi) reaches and typically persist only in river segments that are above a minimum threshold (Perkin and Gido 2011, p. 374). In addition, the blocking of movement of adult fish limits their ability to seek suitable habitat in more perennial, headwater reaches during drought conditions.

### *Modified Geomorphology*

Decreases in stream flows in the South Canadian River have contributed to the decline or loss of wide, shallow sand-bed river channels that are characteristic of peppered chub habitat. Impoundments often reduce the magnitude and frequency of high



flows, leading to bank stabilization and channel narrowing; alter streambank riparian communities; restrict downstream transport of nutrients that support ecosystem development; and alter river substrate (Poff *et al.* 1997, pp. 773–777; Mammoliti 2002, pp. 223–224). Impoundments also alter streamflow by reducing the availability or timing of water, leading to more frequent low-flow conditions, channel drying, pool isolation, and vegetative encroachment into the river channel. Reduction in flows reduces the peppered chub's reproductive success and decreases population resiliency.

Additional alteration of historical physical habitat occurs when dams release sediment-starved water that alters the composition and distribution of the bed substrate. River and stream water velocity slows rapidly where water enters the standing water of reservoirs, resulting in the settlement of suspended sediment within the reservoir (Poff *et al.* 1997, p. 773). The resulting release of low turbidity, high-velocity water from dams scour the downstream reaches, causing the channel to incise and become further isolated from its natural floodplain. Further, such dam releases remove sand and gravel substrate preferred by the peppered chub. Decreased turbidity provides a competitive advantage to fishes that are not as well adapted to the naturally turbid water. When water is released from a main channel reservoir, fish species adapted to naturally turbid conditions of the South Canadian River, such as the peppered chub, are displaced by fish with competitive advantage in less turbid conditions, resulting in a reduction in available habitat and increased predation (Bonner and Wilde 2002, pp. 1205–1206), thereby negatively influencing species distribution and abundance.

#### *Degraded Water Quality*

Suitable water quality is necessary for a healthy aquatic community. Water quality may become impaired through direct contamination or the alteration of freshwater chemistry. Contaminants enter the environment through both point and nonpoint sources including spills, industrial pathways, municipal effluents, and agricultural runoff. These

sources may contribute organic compounds, heavy metals, pesticides, herbicides, and a wide variety of newly emerging contaminants to the aquatic environment. An additional type of water quality impairment is the alteration of water quality parameters such as dissolved oxygen, temperature, and salinity levels. Dissolved oxygen levels may be reduced due to increased nutrient levels (*i.e.*, nitrogen and phosphorous) from agricultural runoff or wastewater effluent (eutrophication). Increased water temperature from more frequent low-flow/drought conditions and climate change can also exacerbate low dissolved oxygen levels, particularly when low-flow conditions strand fish in isolated pools. Similarly, fish stranded in isolated pools can be subjected to naturally concentrated salinity. Additionally, many freshwater systems and shallow aquifers have become increasingly saline due to salinized water recharge (Hoagstrom 2009, p. 35). This effect largely stems from irrigation return flows that have flushed accumulated salts from irrigated lands back into the system.

Chloride concentrations have been increasing in the upper South Canadian River (Service 2018, p. 127). Additionally, arsenic levels in many of the rivers within the historical range of the peppered chub are above the Environmental Protection Agency's established levels for human health for the consumption of organisms but not above levels designed to protect freshwater aquatic communities. Arsenic levels have increased over time in the Cimarron River to the point that golden shiners (*Notemigonus crysoleucas*) exhibited avoidance behavior even though concentrations were below a toxic level (Hartwell *et al.* 1989, p. 452). It is a reasonable presumption that peppered chub would also demonstrate avoidance behavior at similar concentrations of arsenic, causing peppered chub distribution and movements to be disrupted, possibly further fragmenting or reducing the amount of available stream length necessary for all life stages.

### *Introduction of Invasive Species*

The alteration of the hydrologic regime and geomorphology of rivers resulting from impoundments can cause the proliferation of larger, piscivorous fish not normally associated with unimpounded prairie rivers. This fish community conversion is exacerbated by the transfer or stocking of game species in areas that have undergone hydrologic regime or geomorphologic alterations. These species may include smallmouth bass (*Micropterus dolomieu*), largemouth bass (*Micropterus salmoides salmoides*), Florida largemouth bass (*Micropterus salmoides floridanus*), striped bass (*Morone saxatilis*), and channel catfish (*Ictalurus punctatus*) (Howell and Mauk 2011, pp. 11–12), which may prey upon peppered chubs. In a system similar to the Arkansas River Basin, eighteen fish species were introduced or immigrated into the Solomon River basin following impoundment and increased competition from these nonnative species may have contributed to the decline of native fish species (Eberle *et al.* 2002, p. 182, 188). While peppered chub declines throughout the species' range cannot be fully attributed to predation by invasive fishes, a shifting fish community (to more lentic (still water) adapted species) throughout the Lower South Canadian River has coincided with the extirpation of the peppered chub throughout this lower basin. The Upper South Canadian River (between Ute Reservoir and Lake Meredith) is an exception, where the natural fish community is still mostly intact (Service 2018, pp. 66–68).

### *Synergistic Effects*

Many of the above-summarized risk factors may act synergistically or additively on the peppered chub. The combined impact of multiple stressors is likely more harmful than a single stressor acting alone. For example, resiliency of the peppered chub (in the Upper South Canadian River resiliency unit) is considered low due to river impoundment in combination with other stressors acting synergistically. The river is unimpeded for 179 river miles (288 river kilometers), which translates to a fair condition (see Table 2, above). However, our flood frequency analysis in the Upper South Canadian River

resiliency unit shows a decline to a level of null to fair, meaning flood events have significantly declined compared to historical conditions. As a result, the river channel has narrowed dramatically in many areas, resulting in unfavorable habitat for the peppered chub and a poor condition category for this habitat metric. This condition limits the access to and formation of new habitat necessary for egg/larval retention and nursery. The hydroperiod (a comparison between pre-impoundment and post-impoundment discharge) has changed so that discharge is in a null (greater than 90 percent decrease in discharge) to fair condition for peppered chub. Lastly, the low-flow conditions in the stretch are in a poor to fair condition, meaning that low-flow days are common or increasing and some areas are vulnerable to drying in drought years, which could affect the length of unimpeded river and lead to additional channel narrowing. For a full explanation of our habitat factor analysis, see chapter 4 of the SSA report.

We note that, by using the SSA framework to guide our analysis of the scientific information documented in the SSA report, we have not only analyzed individual effects on the species, but we have also analyzed their potential cumulative effects. We incorporate the cumulative effects into our SSA analysis when we characterize the current and future condition of the species. Our assessment of the current and future conditions encompasses and incorporates the threats individually and cumulatively. Our current and future condition assessment is iterative because it accumulates and evaluates the effects of all the factors that may be influencing the species, including threats and conservation efforts. Because the SSA framework considers not just the presence of the factors, but to what degree they collectively influence risk to the entire species, our assessment integrates the cumulative effects of the factors and replaces a standalone cumulative effects analysis.

#### *Conservation Actions*

Conservation efforts are inadequate to prevent the need for listing, at this time. The Service, States (within the historical range of the peppered chub), and academic partners are conducting stream monitoring (general monitoring of fish community). Approximately 95 percent of the adjacent land within the historical range of the peppered chub is private land, and we are aware of no conservation plans or management activities that are in place with private landowners that are specific to the peppered chub.

The Canadian River Municipal Water Authority (in conjunction with several other partners) has a management plan in place for the Arkansas River shiner, a similar species that shares many of the same life-history characteristics and habitat requirements as the peppered chub. This plan aims to maintain and improve habitat in the South Canadian River upstream of Lake Meredith in Texas, to Logan, New Mexico. This plan has been in place since 2005 and covers the last remaining occupied habitat for the peppered chub. The implementation of the management plan has improved riparian health through the removal of non-native trees and may have slowed the rate of habitat decline. However, this conservation plan, in its current form, is not sufficient to address the needs of this last remaining population of peppered chub. The plan does not address maintenance of flows required by peppered chub, including baseflows that maintain river connectivity allowing for fish movement and moderate to high flows that are effective in maintaining wide and complex river channels. Even with this conservation plan in place, habitat has continued to decline and current resiliency of the Upper South Canadian River is in a low condition (see Table 3, above).

This species is listed as endangered in Kansas and protected under the authority of the state's Nongame and Endangered Species Conservation Act of 1975. The Kansas Department of Wildlife, Parks and Tourism (KDWPT) finalized a recovery plan for the peppered chub in May 2005. The recovery plan outlines specific strategies and methods to recover and delist the peppered chub in Kansas. The recovery plan also includes

designated critical habitat (DCH) as required for endangered species conservation and recovery. Kansas Administrative Regulations (K.A.R.) 115-15-3 provides for review and a permit system for any alterations to DCH of which is administered by KDWPT Ecological Services Section. Peppered chub DCH overlaps the federally proposed critical habitat Unit 3 in Kansas.

Efforts are underway regarding a captive propagation program at the Kansas Aquatic Biodiversity Center and at the Tishomingo National Fish Hatchery in Oklahoma. However, there are currently no peppered chub in captivity or being propagated for reintroduction efforts.

Although the above-mentioned efforts are appreciated, they are not adequate to protect the species from extirpation.

#### *Future Scenarios*

After considering the information in the SSA report, we determined the species is in danger of extinction now. For that reason, we are not presenting the future scenarios we developed in the SSA; refer to the SSA report for a detailed description of the future scenarios that we considered in our analysis (Service 2018, pp. 123-141).

#### **Determination of Peppered Chub Status**

Section 4 of the Act (16 U.S.C. 1533) and its implementing regulations (50 CFR part 424) set forth the procedures for determining whether a species meets the definition of “endangered species” or “threatened species.” The Act defines an “endangered species” as a species that is “in danger of extinction throughout all or a significant portion of its range,” and a “threatened species” as a species that is “likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.” The Act requires that we determine whether a species meets the definition of “endangered species” or “threatened species” because of any of the following factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range;

(B) Overutilization for commercial, recreational, scientific, or educational purposes; (C) Disease or predation; (D) The inadequacy of existing regulatory mechanisms; or (E) Other natural or manmade factors affecting its continued existence.

*Status Throughout All of Its Range*

The range of the peppered chub once included Colorado, Kansas, New Mexico, Oklahoma, and Texas, with populations in several streams and rivers. The peppered chub is now confined to a single population in the upper portion of the South Canadian River in Texas and New Mexico, which represents approximately 6 percent of the species' historical range. The one remaining population has declined from an average of approximately 14 percent relative abundance (a component of biodiversity) historically, to a current relative abundance of under 2 percent, meaning the fish community structure has shifted significantly from its baseline condition. Explained in detail in the SSA report and below, the fish community in this population is shifting away from its historical state and the peppered chub is becoming less common compared to other species in the community, meaning the species richness of the community is declining (Service 2018, pp. 63–68). This population has a low resiliency condition category, meaning that the population has a low probability of remaining extant and withstanding periodic or stochastic disturbances under its current condition. Representation has been reduced, with the loss of populations within its historical distribution. Species-level genetic and ecological diversity has been lost over time, as populations have become extirpated. Redundancy has declined dramatically because the peppered chub remains on the landscape in only one population. As such, the peppered chub is at greater risk of extinction due to a catastrophic event when compared to historical conditions.

The peppered chub faces threats from altered flow regimes (*e.g.*, dams and impoundments, groundwater extraction, and climate change effects on precipitation) (Factors A and E), stream fragmentation (Factor A), modified geomorphology (Factor A),

poor water quality (Factor A), and introduction and proliferation of invasive species (Factors A and C). Because peppered chub rarely live beyond 2 years, the risk of species extinction from 2 (or more) successive years of low flow or drought conditions, is high. These threats are currently acting on the peppered chub, and we expect them to continue or worsen into the future. We found no evidence of population- or species-level impacts from overutilization for commercial, recreational, scientific, or educational purposes (Factor B). In our analysis of the factors affecting the peppered chub, we found that there are no existing regulatory mechanisms that adequately address threats to the species such that when considering those conservation efforts, the species would not warrant listing under the Act (Factor D).

After evaluating threats to the species and assessing the cumulative effects of the threats under the section 4(a)(1) factors, we find that the species' resiliency, representation, and redundancy are at levels that put the species at risk of extinction throughout its range. Thus, after assessing the best available information, we conclude that the peppered chub meets the definition of an endangered species because it is in danger of extinction throughout all of its range. We find that a threatened species status is not appropriate for the peppered chub because it is currently at risk of extinction.

#### *Status Throughout a Significant Portion of Its Range*

Under the Act and our implementing regulations, a species may warrant listing if it is in danger of extinction or likely to become so in the foreseeable future throughout all or a significant portion of its range. We have determined that the peppered chub is in danger of extinction throughout all of its range and accordingly did not undertake an analysis of any significant portion of its range. Because the peppered chub warrants listing as endangered throughout all of its range, our determination is consistent with the decision in *Center for Biological Diversity v. Everson*, 2020 WL 437289 (D.D.C. Jan. 28, 2020), in which the court vacated the aspect of the 2014 Significant Portion of its Range



Policy that provided the Services do not undertake an analysis of significant portions of a species' range if the species warrants listing as threatened throughout all of its range.

### *Determination of Status*

Our review of the best available scientific and commercial information indicates that the peppered chub meets the definition of an endangered species. Therefore, we propose to list the peppered chub as an endangered species in accordance with sections 3(6) and 4(a)(1) of the Act.

### **Available Conservation Measures**

Conservation measures provided to species listed as endangered or threatened species under the Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing results in public awareness and conservation by Federal, State, Tribal, and local agencies, as well as private organizations and individuals. The Act encourages cooperation with the States and other countries, and calls for recovery actions to be carried out for listed species. The protection required by Federal agencies and the prohibitions against certain activities are discussed, in part, below.

The primary purpose of the Act is the conservation of endangered and threatened species and the ecosystems upon which they depend. The ultimate goal of such conservation efforts is the recovery of these listed species, so that they no longer need the protective measures of the Act. Subsection 4(f) of the Act calls for the Service to develop and implement recovery plans for the conservation of endangered and threatened species. The recovery planning process involves the identification of actions that are necessary to halt or reverse the species' decline by addressing the threats to its survival and recovery. The goal of this process is to restore listed species to a point where they are secure, self-sustaining, and functioning components of their ecosystems.

Recovery planning includes the development of a recovery outline shortly after a species is listed and preparation of a draft and final recovery plan. The recovery outline guides the immediate implementation of urgent recovery actions and describes the process to be used to develop a recovery plan. Revisions of the plan may be done to address continuing or new threats to the species, as new substantive information becomes available. The recovery plan also identifies recovery criteria to be considered when a species is being reviewed for reclassification from endangered to threatened (“downlisting”) or removal from the List of Endangered and Threatened Wildlife or Plants (“delisting”), and methods for monitoring recovery progress. Recovery plans also establish a framework for agencies to coordinate their recovery efforts and provide estimates of the cost of implementing recovery tasks. Recovery teams (composed of species experts, Federal and State agencies, nongovernmental organizations, and stakeholders) are often established to develop recovery plans. When completed, the recovery outlines, draft recovery plans, and the final recovery plans will be available on our website (<http://www.fws.gov/endangered>), or from our Arlington Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Implementation of recovery actions generally requires the participation of a broad range of partners, including other Federal agencies, States, Tribes, nongovernmental organizations, businesses, and private landowners. Examples of recovery actions include habitat restoration (*e.g.*, restoration of native vegetation), research, captive propagation and reintroduction, and outreach and education. The recovery of many listed species cannot be accomplished solely on Federal lands because their range may occur primarily or solely on non-Federal lands. To achieve recovery of these species requires cooperative conservation efforts on private, State, and Tribal lands. If this species is listed, funding for recovery actions will be available from a variety of sources, including Federal budgets, State programs, and cost share grants for non-Federal landowners, the academic

community, and nongovernmental organizations. In addition, pursuant to section 6 of the Act, the States of Colorado, Kansas, New Mexico, Oklahoma, and Texas would be eligible for Federal funds to implement management actions that promote the protection or recovery of the peppered chub. Information on our grant programs that are available to aid species recovery can be found at <http://www.fws.gov/grants>.

Although the peppered chub is only proposed for listing under the Act at this time, please let us know if you are interested in participating in recovery efforts for the species. Additionally, we invite you to submit any new information on this species whenever it becomes available and any information you may have for recovery planning purposes (see **FOR FURTHER INFORMATION CONTACT**).

Section 7(a) of the Act requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as an endangered or threatened species and with respect to its critical habitat, if any is designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402.

Section 7(a)(4) of the Act requires Federal agencies to confer with the Service on any action that is likely to jeopardize the continued existence of a species proposed for listing or result in destruction or adverse modification of proposed critical habitat. If a species is listed subsequently, section 7(a)(2) of the Act requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of the species or destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into consultation with the Service.

Federal agency actions within the species' habitat that may require conference or consultation or both as described in the preceding paragraph may include, but are not limited to, management and any other landscape-altering activities on Federal lands including those administered by the Service, U.S. Forest Service, Bureau of Land

Management, and National Park Service; issuance of section 404 Clean Water Act (33 U.S.C. 1251 *et seq.*) permits by the U.S. Army Corps of Engineers; and construction and maintenance of roads or highways by the Federal Highway Administration.

The Act and its implementing regulations set forth a series of general prohibitions and exceptions that apply to endangered wildlife. The prohibitions of section 9(a)(1) of the Act, codified at 50 CFR 17.21, make it illegal for any person subject to the jurisdiction of the United States to take (which includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect; or to attempt any of these) endangered wildlife within the United States or on the high seas. In addition, it is unlawful to import; export; deliver, receive, carry, transport, or ship in interstate or foreign commerce in the course of commercial activity; or sell or offer for sale in interstate or foreign commerce any species listed as an endangered species. It is also illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. Certain exceptions apply to employees of the Service, the National Marine Fisheries Service, other Federal land management agencies, and State conservation agencies.

We may issue permits to carry out otherwise prohibited activities involving endangered wildlife under certain circumstances. Regulations governing permits are codified at 50 CFR 17.22. With regard to endangered wildlife, a permit may be issued for the following purposes: for scientific purposes, to enhance the propagation or survival of the species, and for incidental take in connection with otherwise lawful activities. There are also certain statutory exemptions from the prohibitions, which are found in sections 9 and 10 of the Act.

It is our policy, as published in the *Federal Register* on July 1, 1994 (59 FR 34272), to identify to the maximum extent practicable at the time a species is listed, those activities that would or would not constitute a violation of section 9 of the Act. The intent of this policy is to increase public awareness of the effect of a proposed listing on

proposed and ongoing activities within the range of the species proposed for listing.

Based on the best available information, the following actions are unlikely to result in a violation of section 9, if these activities are carried out in accordance with existing regulations and permit requirements; this list is not comprehensive:

- (1) Authorized taking of peppered chub in accordance with a permit issued by us pursuant to section 10 of the Act or with the terms of an incidental take statement pursuant to section 7 of the Act, or possessing specimens of this species that were collected prior to the date of publication in the Federal Register of this final regulation adding this species to the list of endangered and threatened species;
- (2) Normal, lawful recreational activities such as hiking, trail rides, camping, boating, hunting, and fishing, provided unused bait fish are not released back into the water;
- (3) Normal livestock grazing and other standard ranching activities within riparian zones that do not destroy or significantly degrade peppered chub habitat;
- (4) Routine implementation and maintenance of agricultural conservation practices specifically designed to minimize erosion of cropland (e.g., terraces, dikes, grassed waterways, and conservation tillage);
- (5) Existing discharges into waters supporting the peppered chub, provided these activities are carried out in accordance with existing regulations and permit requirements (e.g., activities subject to sections 402, 404, and 405 of the Clean Water Act); and
- (6) Improvements to existing irrigation, livestock, and domestic well structures, such as renovations, repairs, or replacement.

Based on the best available information, the following activities may potentially result in a violation of section 9 of the Act if they are not authorized in accordance with applicable law; this list is not comprehensive:

- (1) Take, which includes harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting, or attempting any of these actions, of peppered chub without a valid permit;
- (2) Capture, survey, or collection of peppered chub specimens without a permit from the Service under section 10(a)(1)(A) of the Act;
- (3) Possess, sell, deliver, carry, transport, or ship illegally taken peppered chub;
- (4) Introduction of non-native fish species that compete or hybridize with, displace, or prey upon peppered chub;
- (5) Unauthorized destruction or alteration of peppered chub habitat by dredging, channelization, impoundment, diversion, recreational vehicle operation within the stream channel, sand or gravel removal, or other activities that result in the destruction or significant degradation of channel stability, streamflow/water quantity, substrate composition, and water quality used by the species for foraging, cover, and spawning;
- (6) Unauthorized discharges (including violation of discharge permits), spills, or dumping of toxic chemicals, silt, household waste, or other pollutants (e.g., sewage, oil and gasoline, heavy metals) into surface or ground waters or their adjoining riparian areas that support/sustain peppered chub;
- (7) Applications of pesticides, herbicides, fungicides and other chemicals, including fertilizers, in violation of label restrictions; and
- (8) Withdrawal of surface or ground waters to the point at which baseflows in water courses (e.g., creeks, streams, rivers) occupied by the peppered chub diminish and habitat becomes unsuitable for the species.

Questions regarding whether specific activities would constitute a violation of section 9 of the Act should be directed to the Arlington Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

## **II. Critical Habitat**

### **Background**

Critical habitat is defined in section 3 of the Act as:

(1) The specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the Act, on which are found those physical or biological features

(a) Essential to the conservation of the species, and

(b) Which may require special management considerations or protection; and

(2) Specific areas outside the geographical area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Our regulations at 50 CFR 424.02 define the geographical area occupied by the species as an area that may generally be delineated around species' occurrences, as determined by the Secretary (*i.e.*, range). Such areas may include those areas used throughout all or part of the species' life cycle, even if not used on a regular basis (*e.g.*, migratory corridors, seasonal habitats, and habitats used periodically, but not solely by vagrant individuals).

Conservation, as defined under section 3 of the Act, means to use and the use of all methods and procedures that are necessary to bring an endangered or threatened species to the point at which the measures provided pursuant to the Act are no longer necessary. Such methods and procedures include, but are not limited to, all activities associated with scientific resources management such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, and

transplantation, and, in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking.

Critical habitat receives protection under section 7 of the Act through the requirement that Federal agencies ensure, in consultation with the Service, that any action they authorize, fund, or carry out is not likely to result in the destruction or adverse modification of critical habitat. The designation of critical habitat does not affect land ownership or establish a refuge, wilderness, reserve, preserve, or other conservation area. Such designation does not allow the government or public to access private lands. Such designation does not require implementation of restoration, recovery, or enhancement measures by non-Federal landowners. Where a landowner requests Federal agency funding or authorization for an action that may affect a listed species or critical habitat, the Federal agency would be required to consult with the Service under section 7(a)(2) of the Act. However, even if the Service were to conclude that the proposed activity would result in destruction or adverse modification of the critical habitat, the Federal action agency and the landowner are not required to abandon the proposed activity, or to restore or recover the species; instead, they must implement “reasonable and prudent alternatives” to avoid destruction or adverse modification of critical habitat.

Under the first prong of the Act’s definition of critical habitat, areas within the geographical area occupied by the species at the time it was listed are included in a critical habitat designation if they contain physical or biological features (1) which are essential to the conservation of the species and (2) which may require special management considerations or protection. For these areas, critical habitat designations identify, to the extent known using the best scientific and commercial data available, those physical or biological features that are essential to the conservation of the species (such as space, food, cover, and protected habitat). In identifying those physical or biological features that occur in specific occupied areas, we focus on the specific features



that are essential to support the life-history needs of the species, including, but not limited to, water characteristics, soil type, geological features, prey, vegetation, symbiotic species, or other features. A feature may be a single habitat characteristic, or a more complex combination of habitat characteristics. Features may include habitat characteristics that support ephemeral or dynamic habitat conditions. Features may also be expressed in terms relating to principles of conservation biology, such as patch size, distribution distances, and connectivity.

Under the second prong of the Act's definition of critical habitat, we can designate critical habitat in areas outside the geographical area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. When designating critical habitat, the Secretary will first evaluate areas occupied by the species. The Secretary will only consider unoccupied areas to be essential where a critical habitat designation limited to geographical areas occupied by the species would be inadequate to ensure the conservation of the species. In addition, for an unoccupied area to be considered essential, the Secretary must determine that there is a reasonable certainty both that the area will contribute to the conservation of the species and that the area contains one or more of those physical or biological features essential to the conservation of the species.

Section 4 of the Act requires that we designate critical habitat on the basis of the best scientific data available. Further, our Policy on Information Standards under the Endangered Species Act (published in the *Federal Register* on July 1, 1994 (59 FR 34271)), the Information Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Pub. L. 106-554; H.R. 5658)), and our associated Information Quality Guidelines, provide criteria, establish procedures, and provide guidance to ensure that our decisions are based on the best scientific data available. They require our biologists, to the extent consistent with the Act and with the

use of the best scientific data available, to use primary and original sources of information as the basis for recommendations to designate critical habitat.

When we are determining which areas should be designated as critical habitat, our primary source of information is generally the information from the SSA report and information developed during the listing process for the species. Additional information sources may include any generalized conservation strategy, criteria, or outline that may have been developed for the species; the recovery plan for the species; articles in peer-reviewed journals; conservation plans developed by States and counties; scientific status surveys and studies; biological assessments; other unpublished materials; or experts' opinions or personal knowledge.

Habitat is dynamic, and species may move from one area to another over time. We recognize that critical habitat designated at a particular point in time may not include all of the habitat areas that we may later determine are necessary for the recovery of the species. For these reasons, a critical habitat designation does not signal that habitat outside the designated area is unimportant or may not be needed for recovery of the species. Areas that are important to the conservation of the species, both inside and outside the critical habitat designation, will continue to be subject to: (1) Conservation actions implemented under section 7(a)(1) of the Act; (2) regulatory protections afforded by the requirement in section 7(a)(2) of the Act for Federal agencies to ensure their actions are not likely to jeopardize the continued existence of any endangered or threatened species; and (3) the prohibitions found in section 9 of the Act. Federally funded or permitted projects affecting listed species outside their designated critical habitat areas may still result in jeopardy findings in some cases. These protections and conservation tools will continue to contribute to recovery of this species. Similarly, critical habitat designations made on the basis of the best available information at the time of designation will not control the direction and substance of future recovery plans,

habitat conservation plans (HCPs), or other species conservation planning efforts if new information available at the time of these planning efforts calls for a different outcome.

### **Prudency Determination**

Section 4(a)(3) of the Act, as amended, and implementing regulations (50 CFR 424.12), require that, to the maximum extent prudent and determinable, the Secretary shall designate critical habitat at the time the species is determined to be an endangered or threatened species. Our regulations (50 CFR 424.12(a)(1)) state that the Secretary may, but is not required to, determine that a designation would not be prudent in the following circumstances:

(i) The species is threatened by taking or other human activity and identification of critical habitat can be expected to increase the degree of such threat to the species;

(ii) The present or threatened destruction, modification, or curtailment of a species' habitat or range is not a threat to the species, or threats to the species' habitat stem solely from causes that cannot be addressed through management actions resulting from consultations under section 7(a)(2) of the Act;

(iii) Areas within the jurisdiction of the United States provide no more than negligible conservation value, if any, for a species occurring primarily outside the jurisdiction of the United States;

(iv) No areas meet the definition of critical habitat; or

(v) The Secretary otherwise determines that designation of critical habitat would not be prudent based on the best scientific data available.

As discussed earlier in this document, there is currently no imminent threat of collection or vandalism identified under Factor B for this species, and identification and mapping of critical habitat is not expected to initiate any such threat. In our SSA and proposed listing determination for the peppered chub, we determined that the present or threatened destruction, modification, or curtailment of habitat or range is a threat to the

peppered chub and that those threats in some way can be addressed by section 7(a)(2) consultation measures. The species occurs wholly in the jurisdiction of the United States, and we are able to identify areas that meet the definition of critical habitat. Therefore, because none of the circumstances enumerated in our regulations at 50 CFR 424.12(a)(1) have been met and because there are no other circumstances the Secretary has identified for which this designation of critical habitat would be not prudent, we have determined that the designation of critical habitat is prudent for the peppered chub.

### **Critical Habitat Determinability**

Having determined that designation is prudent, under section 4(a)(3) of the Act we must find whether critical habitat for the species is determinable. Our regulations at 50 CFR 424.12(a)(2) state that critical habitat is not determinable when one or both of the following situations exist:

- (i) Data sufficient to perform required analyses are lacking, or
- (ii) The biological needs of the species are not sufficiently well known to identify any area that meets the definition of “critical habitat.”

When critical habitat is not determinable, the Act allows the Service an additional year to publish a critical habitat designation (16 U.S.C. 1533(b)(6)(C)(ii)).

We reviewed the available information pertaining to the biological needs of the species and habitat characteristics where the species is located. We find that this information represents the best scientific data available and led us to conclude that the designation of critical habitat is determinable for the peppered chub.

### **Physical or Biological Features Essential to the Conservation of the Species**

In accordance with section 3(5)(A)(i) of the Act and regulations at 50 CFR 424.12(b), in determining which areas we will designate critical habitat from within the geographical area occupied by the species at the time of listing, we consider the physical

or biological features that are essential to the conservation of the species and that may require special management considerations or protection.

The regulations at 50 CFR 424.02 define “physical or biological features essential to the conservation of the species” as the features that occur in specific areas and that are essential to support the life-history needs of the species, including, but not limited to, water characteristics, soil type, geological features, sites, prey, vegetation, symbiotic species, or other features. A feature may be a single habitat characteristic or a more complex combination of habitat characteristics. Features may include habitat characteristics that support ephemeral or dynamic habitat conditions. Features may also be expressed in terms relating to principles of conservation biology, such as patch size, distribution distances, and connectivity. For example, physical features essential to the conservation of the species might include gravel of a particular size required for spawning, alkali soil for seed germination, protective cover for migration, or susceptibility to flooding or fire that maintains necessary early-successional habitat characteristics. Biological features might include prey species, forage grasses, specific kinds or ages of trees for roosting or nesting, symbiotic fungi, or a particular level of nonnative species consistent with conservation needs of the listed species. The features may also be combinations of habitat characteristics and may encompass the relationship between characteristics or the necessary amount of a characteristic essential to support the life history of the species.

In considering whether features are essential to the conservation of the species, the Service may consider an appropriate quality, quantity, and spatial and temporal arrangement of habitat characteristics in the context of the life-history needs, condition, and status of the species. These characteristics include, but are not limited to, space for individual and population growth and for normal behavior; food, water, air, light, minerals, or other nutritional or physiological requirements; cover or shelter; sites for

breeding, reproduction, or rearing (or development) of offspring; and habitats that are protected from disturbance.

We derive the specific physical or biological features essential for the peppered chub from studies of the species' habitat, ecology, and life history. The primary habitat elements that influence resiliency of the species include water quality, water quantity, substrate, channel complexity, and stream length. A full description of the needs of individuals, populations, and the species is available in the SSA report.

#### *Summary of Essential Physical or Biological Features*

As we mentioned previously, peppered chub broadcast-spawn semibuoyant eggs, which remain suspended in the water column by the current until hatching. In addition to adequate stream discharge, an appropriate reach length is also needed to allow the time necessary for egg and larval development into a motile, free-swimming stage. After hatching, flowing water provides the extended development time needed by larval fish. Larval fish may require strong currents to keep them suspended in the water column until they are capable of horizontal movement and until the fish are strong enough to leave the main channel. Without continuous stream flow of sufficient distance, eggs sink to the bottom where they may be covered with silt and suffocate due to the lack of oxygen. We determined that streams from 127 to 185 river miles is a condition category of fair (Table 2) (chapters 2 and 3 of the SSA report) and represents the minimum distance necessary for peppered chub needs.

We summarized water quality and quantity habitat conditions that are conducive to presence of peppered chub in the SSA report in chapter 2. Studies cited in the SSA report outline the peppered chub tolerances to variations of water quality and quantity. Mortality was observed outside these thresholds outlined below, in many cases.

Native riparian vegetation is another essential component of peppered chub habitat, in that it provides bank stabilization, a terrestrial prey base, and can slow or

reverse stream narrowing in areas where significant stream narrowing has occurred.

Native riparian and floodplain vegetation minimizes impacts from salt cedar encroachment and other invasive and opportunistic species such as common reed and the newly documented ravenna grass and maintains wider, braided channels more suitable for successful reproduction (Service 2018, p. 37).

Peppered chub need adequate lengths of unimpounded flowing water free from an overabundance of predators, to successfully reproduce and maintain populations. Their historical range has been fragmented by several impoundments. Reduced water velocities from impoundments increase the likelihood of establishment of new species or increased abundance of existing species more adapted to the lentic environment (Poff et al. 1997, p. 776). Lentic fish species are often top predators and can have negative impacts on smaller, riverine species (Poff et al. 1997, p. 777; Mammoliti 2002, p. 223). The resulting fish community often results in a lower relative abundance of peppered chub or in extirpation in the population. Thus, the peppered chub needs river management that results in conditions that favor the chub over lentic fish species.

We have determined that the following physical or biological features are essential to the conservation of the peppered chub:

- (1) Unobstructed river segments greater than 127 river miles (rmi) (205 river kilometers (rkm)) in length that are characterized by a complex braided channel and substrates of predominantly sand, with some patches of silt, gravel, and cobble.

- (2) Flowing water with adequate depths to support all life stages and episodes of elevated discharge to facilitate successful reproduction, channel and floodplain maintenance, and sediment transportation.

- (3) Water of sufficient quality to support survival and reproduction, which includes, but is not limited to, the following conditions:

- (i) Water temperatures generally less than 98.2 degrees Fahrenheit (°F) (36.8

degrees Celsius (°C));

(ii) Dissolved oxygen concentrations generally greater than 3.7 parts per million (ppm);

(iii) Conductivity generally less than 16.2 millisiemens per centimeter (mS/cm);

(iv) pH generally ranging from 5.6 to 9.0; and

(v) Sufficiently low petroleum and other pollutant concentrations such that reproduction and/or growth is not impaired.

(4) Native riparian vegetation capable of maintaining river water quality, providing a terrestrial prey base, and maintaining a healthy riparian ecosystem.

(5) A level of predatory or competitive, native or nonnative fish present such that peppered chub population's resiliency is not affected.

### **Special Management Considerations or Protection**

When designating critical habitat, we assess whether the specific areas within the geographical area occupied by the species at the time of listing contain features that are essential to the conservation of the species and which may require special management considerations or protection. The features essential to the conservation of the peppered chub may require special management considerations or protections to reduce the following threats: (1) Altered flow regimes, including (but not limited to) dams and impoundments and groundwater extraction; (2) stream fragmentation; (3) modified geomorphology; (4) poor water quality; (5) impacts from introduction of invasive species (fish and vegetation) and the introduction of native competitors for sport fishing; and (6) other stressors including (but not limited to) gravel mining and dredging, commercial bait fish harvesting, and off-road vehicle use.

Management activities that could ameliorate these threats include, but are not limited to: Development of groundwater conservation strategies; removal of



impoundments or creation of fish passage, development of water release strategies for reservoirs; minimization of in-channel work from utility or road projects; maintenance of bank stability and revegetation of impacted areas; incorporation of integrated pest management strategies (for saltcedar (*Tamarix* spp.) and other invasive plants); and development of best management practices to reduce pollutant discharges and to develop water conservation measures that reduce the need for water diversions.

### **Criteria Used To Identify Critical Habitat**

As required by section 4(b)(2) of the Act, we use the best scientific data available to designate critical habitat. In accordance with the Act and our implementing regulations at 50 CFR 424.12(b), we review available information pertaining to the habitat requirements of the species and identify specific areas within the geographical area occupied by the species at the time of listing and any specific areas outside the geographical area occupied by the species to be considered for designation as critical habitat.

The current distribution of the species is much reduced from its historical range. We anticipate that recovery will require continued protection of the existing population and its habitat, as well as reintroduction of peppered chub into historically occupied areas, ensuring there are adequate numbers in stable populations and that these populations occur over a wide geographic area. This strategy will help to ensure that catastrophic events, such as the effects of drought, cannot simultaneously affect all known populations. Rangewide recovery considerations, such as maintaining existing genetic diversity and striving for representation of all major portions of the species' current range, were considered in formulating this proposed critical habitat.

Sources of data for this proposed critical habitat designation include multiple databases maintained by Arkansas Game and Fish Commission; Fishes of Texas; Colorado Parks and Wildlife Department; Kansas Department of Wildlife, Parks and

Tourism; New Mexico Department of Game and Fish; New Mexico Interstate Stream Commission; Oklahoma Department of Environmental Quality; Texas Parks and Wildlife Department; Oklahoma State University; University of New Mexico Museum of Southwestern Biology; and New Mexico Department of Game and Fish, as well as numerous survey reports on rivers and streams throughout the species' range (see SSA report). We have also reviewed available information that pertains to the habitat requirements of this species. Sources of information on habitat requirements include studies conducted at occupied sites and published in peer-reviewed articles and agency reports, and data collected during monitoring efforts.

#### *Areas Occupied at the Time of Listing*

Our review of occupied range of the peppered chub is based on numerous species experts who concluded that by the year 2000, the peppered chub had significantly declined and was isolated to the South Fork Ninnescah River in Kansas and the South Canadian River between Ute Reservoir in New Mexico and Lake Meredith in the Texas panhandle. Using data from over 1,800 fish collections, we define “currently occupied” as river reaches with positive surveys from 2013 to 2017. By the year 2013, the peppered chub was no longer being observed in the Ninnescah River in Kansas, despite extensive survey efforts. The peppered chub continues to be observed in surveys in the South Canadian River between the Ute Reservoir and Lake Meredith, and this is the only area we considered to be currently occupied. We propose to designate one occupied unit as critical habitat for the peppered chub in the upper South Canadian River.

The one remaining population of peppered chub has a low level of resiliency (Table 3.) and because of its relatively short life cycle (~2 years), a series of back-to-back stochastic events could significantly reduce or extirpate the remaining population. The peppered chub range has been highly restricted (~6 percent remaining); therefore, its adaptive capacity (representation) has been dramatically reduced. The significantly

reduced range reduces peppered chub exposure to ecologically diverse habitats and reduces its ability to adapt to changing environments over time. A low resiliency single population provides little redundancy for the species and a single catastrophic event could cause species extinction. Consequently, we have determined that occupied area is inadequate to ensure the conservation of the species. Therefore, we have also identified, and are proposing for designation of critical habitat, unoccupied areas that are essential for the conservation of the species.

#### *Areas Outside the Geographic Area Occupied at the Time of Listing*

Because we have determined occupied areas alone are not adequate for the conservation of the species, we have evaluated whether any unoccupied areas are essential for the conservation of the species. We are proposing as critical habitat three units that are currently unoccupied. We have determined that each is essential for the conservation of the species. All three units have at least one of the physical or biological features essential to the conservation of the species and we are reasonably certain that each will contribute to the conservation of the species. Our specific rationale for each unit can be found below in the unit descriptions.

Peppered chub has been completely extirpated from all but a single river reach within its historical range. Additionally, the one remaining population was found to be in “low” condition in our resiliency analysis and protecting it alone would not sufficiently conserve the species. Additional healthy populations are needed because of the inherent threat from environmental stochasticity (such as a multi-year drought) and the possibility that the species could be extirpated in a relatively short period time, given a 2-year life cycle. Furthermore, a single catastrophic event could extirpate the last remaining population, therefore resulting in species extinction.

As a result, additional healthy populations of the peppered chub must be established to increase its viability and to recover the species. Having at least two

resilient populations in the Canadian River and at least one population in each of the Ninnescah River and Cimarron River is essential for the conservation of the peppered chub. These specific areas encompass the minimum area of the species' historical range within the proposed critical habitat designation, while still providing ecological diversity so that the species has the ability to evolve and adapt over time (representation) and ensure that the species has an adequate level of redundancy to guard against future catastrophic events. These areas also represent the areas within the historical range with the best potential for recovery of the species due to their current conditions and likely suitability for reintroductions.

The species' adaptive capacity (and therefore representation) is limited by its current range. Due to the species constricted range the species as a whole, is present only in a limited scope of its historical ecological setting and therefore has little to no opportunity to adapt to a changing environment over time. The unoccupied units that we have selected to designate for the peppered chub represent the smallest number of units that could be designated while still capturing the widest range of historical ecological settings and increasing redundancy.

Redundancy has been dramatically reduced and must be improved in order to have a viable species in the future. The peppered chub was once common among several streams throughout the Arkansas River Basin and was highly redundant because it existed in many streams across a range. The species now occurs in one river segment on a small portion of its historical range. The species needs healthy populations distributed across its historical range to guard against catastrophic events. The three units that were selected to capture the species historical ecological settings are also essential to increasing the redundancy of the species.

Accordingly, we propose to designate one unoccupied unit in the Canadian River, one unoccupied unit in the Cimarron River, and one unoccupied unit in the South Fork

Ninnescah River. A single occupied unit is not sufficient to maintain the viability of the species over time. The range of the remaining population is dispersed across approximately six percent of the species' historical range providing significantly reduced ecological diversity (representation), which reduces the potential for the species to adapt to a changing environment over time. This population provides little to no redundancy to guard against a catastrophic event.

Establishing healthy population in these three currently unoccupied units would increase the resiliency, representation and redundancy (viability) of the species. If established, each unoccupied unit contributes ecological diversity (representation) or guards against catastrophic events (redundancy) or both. As described below in the individual unit descriptions, each unit contains one or more of the PBFs and are reasonably certain to contribute to the conservation of the species.

#### *General Information on the Maps of the Proposed Critical Habitat Designation*

The proposed critical habitat designation is defined by the map or maps, as modified by any accompanying regulatory text, presented at the end of this document under **Proposed Regulation Promulgation**. We include more detailed information on the boundaries of the proposed critical habitat designation in the discussion of individual units, below. We will make the coordinates or plot points or both on which each map is based available to the public on <http://www.regulations.gov> under Docket No. FWS–R2–ES–2019–0019, and at the Arlington Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**, above). When determining proposed critical habitat boundaries, we made every effort to avoid including developed areas such as lands covered by pavement, buildings, and other structures because such lands lack physical or biological features necessary for the peppered chub. The scale of the maps we prepared under the parameters for publication within the Code of Federal Regulations may not reflect the exclusion of such developed lands. Any such lands inadvertently left

inside critical habitat boundaries shown on the maps of this proposed rule have been excluded by text in the proposed rule and are not proposed for designation as critical habitat. Therefore, if the critical habitat is finalized as proposed, a Federal action involving these lands would not trigger section 7 consultation under the Act with respect to critical habitat and the requirement of no adverse modification unless the specific action would affect the physical or biological features in the adjacent critical habitat.

### **Proposed Critical Habitat Designation**

We are proposing to designate approximately 1,068 rmi (1,719 rkm) in four units in Kansas, New Mexico, Oklahoma, and Texas as critical habitat for the peppered chub. One of the units is currently occupied by the species and contains those physical or biological features essential to the conservation of the species but may require special management considerations. Three of the units are currently unoccupied by the species but are essential to the conservation of the species. All units proposed may require special management considerations or protection to address habitat degradation resulting from the cumulative impacts of land use change and associated watershed-level effects on water quality, water quantity, substrate, channel complexity, unimpounded river length, and instream habitat suitability. These stressors are primarily related to habitat changes: the loss of flowing water, altered flow regimes, modified geomorphology, stream fragmentation, and impairment of water quality; these may all be exacerbated by climate change. Table 4, below, shows the proposed units' names, land ownership of the riparian areas surrounding the units, and approximate river miles. Navigable streambeds in the State of Texas are owned by the State; therefore, the critical habitat units within Texas are on State-owned land. In Kansas, New Mexico, and Oklahoma, the landowners of the adjacent land consist of Federal, Tribal, State, and private landowners that may own the streambed. All proposed units include only the river habitat up to bankfull. The bankfull width is the width of the stream or river at bankfull discharge. Bankfull discharge is the

flow at which water begins to leave the active channel and move into the floodplain. It serves to identify the point at which the active channel ceases and the floodplain begins.

**Table 4. Proposed critical habitat units for the peppered chub.**

<b>Critical Habitat Unit</b>	<b>Occupied at the Time of Listing</b>	<b>Riparian Ownership</b>	<b>Length of Unit in River Miles (Kilometers)</b>
Unit 1. Upper South Canadian River	Yes	Federal; State; Private; Other	197 (317)
Unit 2. Lower South Canadian River	No	Federal; Tribal; Private; Other	400 (644)
Unit 3. Arkansas/Ninnescah River	No	Private; Other	179 (288)
Unit 4. Cimarron River	No	Federal; Tribal; State; Private; Other	292 (470)
<b>Total</b>			<b>1,068 (1,719)</b>

Note: Unit lengths may not sum due to rounding.

*Unit 1: Upper South Canadian River, New Mexico and Texas*

Unit 1 consists of approximately 197.16 river miles (rmi) (317.29 river kilometers (rkm)) comprised of a portion of the South Canadian River originating below the Ute Dam west of Logan, New Mexico, and extending downstream to the delta of Lake Meredith, Texas; and a portion of Revuelto Creek originating at the Interstate Highway 40 bridge extending downstream to the confluence with the South Canadian River, New Mexico. Revuelto Creek is an important source of water and sediment for the Upper South Canadian River and is considered occupied. Unit 1 occurs largely within private land or “other.” Land described as “other” is land with non-Federal ownership that could not be determined, but is likely to be tribal or private. This unit possess those characteristics as described by physical or biological feature 1. Physical or biological features 2 and 3 are in degraded condition in this unit during some times of the year and are dependent upon water releases from Ute Reservoir, precipitation and groundwater; but are currently sufficient to maintain self-sustaining populations. Water management strategies could enhance physical or biological features 2 and 3 within this unit. Current

management to address native riparian vegetation is ongoing throughout this unit as it pertains to physical or biological feature 4; however, additional efforts to improve streamflow and channel morphology/complexity could further benefit this species. Predatory and other fish that may compete with peppered chub are present in this unit, but any effect to peppered chub resiliency is unclear. Thus, management actions to achieve physical or biological feature 5 may be necessary if additional information suggests the species' resiliency is affected by predation or competition. We are requesting public input in an effort to clarify these uncertainties in land ownership using the public comment period and addressed in the **Information Requested** section above. Approximately 21.45 rmi (34.52 rkm) are publicly owned within the Lake Meredith National Recreation Area managed by the National Park Service, and approximately 6.14 rmi (9.88 rkm) are managed by the Bureau of Reclamation. In addition, several small segments of public lands occur at bridge crossings, road easements, and the like.

*Unit 2: Lower South Canadian River, Texas and Oklahoma*

Because we have determined occupied areas are not adequate for the conservation of the species, we have evaluated whether any unoccupied areas are essential for the conservation of the species and identified this area as essential for the conservation of the species. Unit 2 comprises approximately 400.01 rmi (643.86 rkm) consisting of the South Canadian River originating at the U.S. 83 bridge north of Canadian, Texas, and extending downstream to the U.S. 75 bridge northwest of Calvin, Oklahoma. Unit 2 occurs almost entirely within land under "other" land ownership, as described above under Unit 1. Approximately 13.15 rmi (21.16 rkm) is managed by the U.S. Army Corps of Engineers, and approximately 0.75 rmi (1.21 rkm) is held in trust by the Bureau of Indian Affairs as Cheyenne-Arapaho Trust Land. In addition, several small segments of public land occur at bridge crossings, road easements, and the like. Historically, peppered chub was observed in the lower portions of the South Canadian River.



Peppered chub were last reported in the South Canadian River resiliency unit in 1999. Currently it supports other pelagic-spawning prairie fish, such as the threatened Arkansas River shiner. This unit has at least one of the physical or biological features essential to the conservation of the species and we are reasonably certain that each will contribute to the conservation of the species. Our specific rationale for this unit can be found below in this unit description.

Although it is considered unoccupied, portions of this unit contain some or all of the physical or biological features essential for the conservation of the species. Unit 2 possesses those characteristics as described by physical or biological feature 1 and is the longest unfragmented river segment within the historical range of the peppered chub. Although we have determined that peppered chub requires 127 rmi of unobstructed river characterized by a complex braided channel and substrates of predominantly sand, with some patches of silt, gravel, and cobble, that is the minimum number of river miles required adequately facilitate reproduction and maintain a population assuming all of the physical habitat requirements exist throughout the stretch of river (Service 2018, pp. 32 & 116). In order to establish populations, peppered need a longer river length that will not only adequately facilitate reproduction but also population growth (Service 2018, p. 97). Additionally, the required habitat factors (from physical or biological feature 1) do not exist throughout the entire river segment and because the peppered chub has an approximate 2-year life cycle any additional stream length would guard against extirpation due to multi-year droughts.

Physical or biological feature 2 is degraded in the upper portion of unit during some times of the year and is dependent upon precipitation and groundwater. Based on available data (OWRB 2017, pg. 39-43), physical or biological feature 3 is present throughout this unit. Current management to address native riparian vegetation is ongoing throughout this unit as it pertains to physical or biological feature 4; however,

these management efforts are not specifically directed at benefiting peppered chubs and additional management efforts may be necessary. Management actions to control non-native phreatophytic vegetation upstream and within the upper portion of this unit could also improve physical or biological feature 2 by reducing evapotranspiration. Predatory and other fish that may compete with peppered chub are present in this unit, but any effect to peppered chub resiliency is unclear. Thus, management actions to achieve physical or biological feature 5 may be necessary if additional information suggests the species' resiliency is affected by predation or competition.

If this unit were established, it would likely be a moderately to highly resilient population due to longer stream length compared to other units and would increase the species redundancy by one population. This unit is essential for the conservation of the species because it will provide habitat for range expansion in portions of known historical habitat that is necessary to increase viability of the species by increasing its resiliency, redundancy, and representation. A portion (approximately 238.2 rmi (383.3 rkm)) of listed Arkansas River shiner critical habitat is present in Unit 2.

We are reasonably certain that this unit will contribute to the conservation of the species, because the need for conservation efforts is recognized and is being discussed by our conservation partners, and methods for restoring and reintroducing the species into unoccupied habitat are being worked on. The State of Oklahoma has identified the peppered chub as a tier III species of greatest conservation need (moderate level of conservation need) in the Oklahoma Comprehensive Wildlife Conservation Strategy (ODWC 2016, pg. 399). The State strategy was developed to articulate the conservation strategies necessary to conserve their rare and declining wildlife species and maintain Oklahoma's rich biological heritage for present and future generations (ODWC 2016, pg. 3). The strategy identifies several general conservation actions that would improve physical or biological features 2, 3, and 4 and benefit the peppered chub, if a population

were established and if the actions were implemented, such as; providing funding to landowners to restore channel morphology, water conservation, coordinating further with the Service and public education (ODWC 2016, pp. 45–46). State and Federal partners have shown interest in propagation and reintroduction efforts for the peppered chub in this area. As previously mentioned, efforts are underway regarding a captive propagation program for peppered chub at the Tishomingo National Fish Hatchery in Oklahoma. The State of Kansas, Tishomingo National Fish Hatchery and the Oklahoma Fish and Wildlife Conservation Office collaborate regularly on conservation actions.

The State of Texas also recognizes the peppered chub as species of greatest conservation need and gives the species a rank of S1 (At very high risk of extirpation in the jurisdiction due to very restricted range, very few populations or occurrences, very steep declines, severe threats, or other factors). Texas is one of only two states where the species remains extant. The State has also identified the portion of the Canadian River within the boundaries of the State of Texas (where the species exists and areas inside this unit) as an ecologically significant stream because it has threatened and endangered species/unique communities present (Texas Water Development Board (TWDB) 2016, pg. 8-2). The Canadian River segment in the panhandle of Texas is also significant because of the presence of unique, exemplary or unusually extensive natural communities that water development projects would have significant detrimental effects upon (TWDB 2016, pg. 8-2).

### *Unit 3: Arkansas/Ninnescah River, Kansas and Oklahoma*

Because we have determined occupied areas are not adequate for the conservation of the species, we have evaluated whether any unoccupied areas are essential for the conservation of the species and identified this area as essential for the conservation of the species. Unit 3 comprises approximately 178.96 rmi (288.02 rkm) consisting of the South Fork Ninnescah River originating at the Highway 54/400 bridge east of Pratt,

Kansas, and extending downstream to the River Road Bridge east of Newkirk, Oklahoma. Unit 3 occurs almost entirely on land under “other” land ownership, as described above under Unit 1. A small amount of this unit is publicly owned in the form of bridge crossings, road easements, and the like. Peppered chub was observed in the Ninnescah River in surveys between the year 2000 and 2013. This unit has at least one of the physical or biological features essential to the conservation of the species and we are reasonably certain that each will contribute to the conservation of the species. Our specific rationale for this unit can be found below in this unit description.

Although it is currently considered unoccupied, this unit contains some or all of the physical or biological features necessary for the conservation of the species. Physical or biological feature 1 is in degraded condition in this unit during some times of the year and is dependent on adequate flows. However, if implemented, habitat restoration actions as identified in the Kansas Recovery Plan for the Peppered Chub and the Kansas Wildlife Action Plan would meet the requirements of physical or biological feature 1 (Layer and Brinkman 2005, pg. 16; Rohweder 2015, pp. 52–55). Based on periodic sampling during summer months over a range of three decades, physical or biological features 2 and 3 are consistently present in this unit (KS DWPT, unpublished data 2019). Water management strategies could further enhance physical or biological features 2 and 3. Current management to address native riparian vegetation is ongoing throughout this unit as it pertains to physical or biological feature 4. Management actions to control non-native phreatophytic vegetation upstream and within the upper portion of this unit could also improve physical or biological feature 2 by reducing evapotranspiration. Predatory and other fish that may compete with peppered chub are present in this unit, but any effect to peppered chub resiliency is unclear. Thus, management actions to achieve physical or biological feature 5 may be necessary if additional information suggests the species’ resiliency may be affected by predation or competition.

Unit 3 was the most recently occupied of the three unoccupied units. If established, the population would increase redundancy (and guard against catastrophic events) by not only increasing the number of populations but also adding a population that is geographically separate from the Upper South Canadian River population. A population at the extreme north-eastern portion of the historical range also dramatically increases ecological diversity for the peppered chub (representation). This unit is essential for the conservation of the species because it will provide habitat for range expansion in portions of known historical habitat that is necessary to increase viability of the species by increasing its resiliency, redundancy, and representation.

We are reasonably certain that this unit will contribute to the conservation of the species, because the need for conservation efforts has been recognized by our conservation partners, and development of methods for restoring habitats and reintroducing the species into unoccupied habitat are ongoing. The State of Kansas has identified the peppered chub as a tier I species of greatest conservation need in their State Wildlife Action Plan (Rohweder 2015, pg. 55). The State plan was developed to guide KDWPT and conservation partners in the planning and implementation of conservation measures to address priority issues and actions, as identified in the plan, which would improve physical or biological features 1-5 (Rohweder 2015, pg. ii). Both the Service and the State of Kansas identified the peppered chub as a species that could significantly benefit from propagation efforts (Webb et al., n.d., pg. 7). Habitat restoration, such as removal or modification of fish barriers, has been identified in the Recovery Plan for the Peppered Chub (Layher and Brinkman 2005, pg. 16). As previously mentioned, efforts are underway regarding a captive propagation program for peppered chub at the Kansas Aquatic Biodiversity Center.

*Unit 4: Cimarron River, Kansas and Oklahoma*

Because we have determined occupied areas are not adequate for the conservation of the species, we have evaluated whether any unoccupied areas are essential for the conservation of the species and identified this area as essential for the conservation of the species. Unit 4 comprises approximately 291.82 rmi (469.63 rkm) consisting of the Cimarron River originating at the U.S. 183 bridge east of Englewood, Kansas, and extending downstream to the OK 51 bridge northeast of Oilton, Oklahoma. Unit 4 occurs almost entirely on land under “other” land ownership, as described above under Unit 1. Approximately 0.86 rmi (1.38 rkm) is managed by the U.S. Army Corps of Engineers, approximately 0.56 rmi (0.91 rkm) is managed by the Bureau of Land Management, and approximately 0.94 rmi (1.51 rkm) is held in trust by the Bureau of Indian Affairs as Sac and Fox Nation Trust Land and Pawnee Trust Land. In addition, small amounts of the unit are publicly owned in the form of bridge crossings, road easements, and the like. Historically, peppered chub was observed in the Cimarron River. The peppered chub was last observed in the Cimarron River resiliency unit in 2011. This unit has at least one of the physical or biological features essential to the conservation of the species and we are reasonably certain that each will contribute to the conservation of the species. Our specific rationale for this unit can be found below in this unit description.

Unit 4 is considered unoccupied; however, portions of this unit contain some or all of the physical or biological features necessary for the conservation of the species. Physical or biological feature 1 is present within this unit, as described in the Unit 2 description. Physical or biological feature 2 is degraded in upstream portions of this unit during some times of the year (absent during elevated drought conditions) and is dependent upon precipitation and groundwater. Based on available data, physical or biological feature 3 is present throughout this unit with the exception of 3(iii) (conductivity generally less than 16.2 mS/cm) along an approximate 79 mile portion upstream of Waynoka to Ames, Oklahoma. Management actions would likely be

necessary to reduce conductivity in this area (OWRB 2017, pg. 49-56). Current management to address native riparian vegetation is ongoing throughout this unit as it pertains to physical or biological feature 4. Management actions to control non-native phreatophytic vegetation upstream and within the upper portion of this unit could also improve physical or biological feature 2 and 3 by reducing evapotranspiration. Predatory and other fish that may compete with peppered chub are present in this unit, but any effect to peppered chub resiliency is unclear. Thus, management actions to achieve physical or biological feature 5 may be necessary if additional information suggests the species' resiliency is affected by predation or competition.

Peppered chub currently has little to no representation and redundancy. If established, this population would increase redundancy by one population, thereby guarding against catastrophic events, and would increase the species' ecological diversity (representation). This unit is essential for the conservation of the species because it will provide habitat for range expansion in portions of known historical habitat that is necessary to increase viability of the species by increasing its resiliency, redundancy, and representation. Critical habitat for the Arkansas River shiner is present within a portion (approximately 201.5 rmi (324.30 rkm)) of Unit 4.

We are reasonably certain that this unit will contribute to the conservation of the species because the need for conservation efforts has been recognized and is being discussed by our conservation partners, and methods for restoring and reintroducing the species into unoccupied habitat are ongoing. The State of Oklahoma has identified the peppered chub as a tier III species of greatest conservation need in the Oklahoma Comprehensive Wildlife Conservation Strategy (ODWC 2016, pg. 399). The State strategy was developed to articulate the conservation strategies necessary to conserve their rare and declining wildlife species and maintain Oklahoma's rich biological heritage for present and future generations (ODWC 2016, pg. 3). The strategy identifies several

general conservation actions that would improve physical or biological features 2, 3, and 4 and benefit the peppered chub, if a population were established and if the actions were implemented, such as; providing funding to landowners to restore channel morphology, water conservation, coordinating further with the Service, public education (ODWC 2016, pp. 45–46). State and Federal partners have shown interest in propagation and reintroduction efforts for the peppered chub. As previously mentioned, efforts are underway regarding a captive propagation program for peppered chub at the Tishomingo National Fish Hatchery in Oklahoma.

It is possible that significant drought conditions in the late 1980s and early 1990s led to the peppered chub decline and eventual extirpation in the Cimarron River (in Unit 4). The current condition of the unit, however, is likely to support populations once again (Service 2018, pg. 150). The shoal chub (*Macrhybopsis hyostoma*), a species in the same genus as the peppered chub, has re-established populations and continues to persist in the Cimarron River after previously experiencing significant declines (Luttrell et al. 1999, pp. 984–985).

## **Effects of Critical Habitat Designation**

### *Section 7 Consultation*

Section 7(a)(2) of the Act requires Federal agencies, including the Service, to ensure that any action they fund, authorize, or carry out is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat of such species. In addition, section 7(a)(4) of the Act requires Federal agencies to confer with the Service on any agency action which is likely to jeopardize the continued existence of any species proposed to be listed under the Act or result in the destruction or adverse modification of proposed critical habitat.



We published a final regulation with a revised definition of destruction or adverse modification on August 27, 2019 (84 FR 44976). Destruction or adverse modification means a direct or indirect alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of a listed species.

If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency (action agency) must enter into consultation with us. Examples of actions that are subject to the section 7 consultation process are actions on State, tribal, local, or private lands that require a Federal permit (such as a permit from the U.S. Army Corps of Engineers under section 404 of the Clean Water Act (33 U.S.C. 1251 *et seq.*) or a permit from the Service under section 10 of the Act) or that involve some other Federal action (such as funding from the Federal Highway Administration, Federal Aviation Administration, or the Federal Emergency Management Agency). Federal actions not affecting listed species or critical habitat—and actions on State, tribal, local, or private lands that are not federally funded, authorized or carried out by a Federal agency—do not require section 7 consultation.

Compliance with the requirements of section 7(a)(2) is documented through our issuance of:

- (1) A concurrence letter for Federal actions that may affect, but are not likely to adversely affect, listed species or critical habitat; or
- (2) A biological opinion for Federal actions that may affect, and are likely to adversely affect, listed species or critical habitat.

When we issue a biological opinion concluding that a project is likely to jeopardize the continued existence of a listed species and/or destroy or adversely modify critical habitat, we provide reasonable and prudent alternatives to the project, if any are identifiable, that would avoid the likelihood of jeopardy and/or destruction or adverse modification of critical habitat. We define “reasonable and prudent alternatives” (at 50

CFR 402.02) as alternative actions identified during consultation that:

- (1) Can be implemented in a manner consistent with the intended purpose of the action,
- (2) Can be implemented consistent with the scope of the Federal agency's legal authority and jurisdiction,
- (3) Are economically and technologically feasible, and
- (4) Would, in the Service Director's opinion, avoid the likelihood of jeopardizing the continued existence of the listed species and/or avoid the likelihood of destroying or adversely modifying critical habitat.

Reasonable and prudent alternatives can vary from slight project modifications to extensive redesign or relocation of the project. Costs associated with implementing a reasonable and prudent alternative are similarly variable.

Regulations at 50 CFR 402.16 require Federal agencies to reinitiate formal consultation on previously reviewed actions. These requirements apply when the Federal agency has retained discretionary involvement or control over the action (or the agency's discretionary involvement or control is authorized by law) and, subsequent to the previous consultation, we have listed a new species or designated critical habitat that may be affected by the Federal action, or the action has been modified in a manner that affects the species or critical habitat in a way not considered in the previous consultation. In such situations, Federal agencies sometimes may need to request reinitiation of consultation with us, but the regulations also specify some exceptions to the requirement to reinitiate consultation on specific land management plans after subsequently listing a new species or designating new critical habitat. See the regulations for a description of those exceptions.

#### *Application of the "Adverse Modification" Standard*

The key factor related to the destruction or adverse modification determination is

whether implementation of the proposed Federal action directly or indirectly alters the designated critical habitat in a way that appreciably diminishes the value of the critical habitat as a whole for the conservation of the listed species. As discussed above, the role of critical habitat is to support physical or biological features essential to the conservation of a listed species and provide for the conservation of the species.

Section 4(b)(8) of the Act requires us to briefly evaluate and describe, in any proposed or final regulation that designates critical habitat, activities involving a Federal action that may violate 7(a)(2) of the Act by destroying or adversely modifying such designation.

Activities that the Services may, during a consultation under section 7(a)(2) of the Act, find are likely to destroy or adversely modify critical habitat include, but are not limited to:

- (1) Replacement and maintenance of river crossings and bridges;
- (2) Construction, replacement, maintenance, or removal of pipelines, or abandonment of pipelines or electrical lines crossing streams;
- (3) Park maintenance and authorization of recreational activities by the U.S. National Park Service (*e.g.*, permitting recreational off-road vehicle use at Lake Meredith Recreational Area);
- (4) Operation and maintenance of salinity control programs;
- (5) Dam maintenance, water releases from dams, and flow management via dams;
- (6) Water withdrawals and groundwater withdrawals from reservoirs;
- (7) Water development projects (such as new impoundments, diversions, or reservoir projects);
- (8) Watershed restoration activities;
- (9) Stream restoration and habitat improvement;
- (10) Stocking of nonnative fish or native fish that compete with the peppered

chub;

(11) Oil and gas exploration and extraction; and

(12) New or expanded development of municipal or agricultural water supplies.

## **Exemptions**

### *Application of Section 4(a)(3) of the Act*

Section 4(a)(3)(B)(i) of the Act (16 U.S.C. 1533(a)(3)(B)(i)) provides that: “The Secretary shall not designate as critical habitat any lands or other geographical areas owned or controlled by the Department of Defense, or designated for its use, that are subject to an integrated natural resources management plan [INRMP] prepared under section 101 of the Sikes Act (16 U.S.C. 670a), if the Secretary determines in writing that such plan provides a benefit to the species for which critical habitat is proposed for designation.” There are no Department of Defense (DoD) lands with a completed INRMP within the proposed critical habitat designation.

### **Consideration of Impacts under Section 4(b)(2) of the Act**

Section 4(b)(2) of the Act states that the Secretary shall designate and make revisions to critical habitat on the basis of the best available scientific data after taking into consideration the economic impact, national security impact, and any other relevant impact of specifying any particular area as critical habitat. The Secretary may exclude an area from critical habitat if he determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat, unless he determines, based on the best scientific data available, that the failure to designate such area as critical habitat will result in the extinction of the species. In making that determination, the statute on its face and the legislative history are clear that the Secretary has broad discretion regarding which factor(s) to use and how much weight to give to any factor.

The first sentence in section 4(b)(2) of the Act requires that we take into consideration the economic, national security, or other relevant impacts of designating

any particular area as critical habitat. We describe below the process that we undertook for taking into consideration each category of impacts and our analyses of the relevant impacts.

Tribal areas are included in this critical habit designation. We are considering these areas for exclusion from critical habitat (see **Exclusions**, below). However, the final decision on whether to exclude any areas will be based on the best scientific data available at the time of the final designation, including information we obtain during the comment period and information about the economic impacts of the designation. Accordingly, we have prepared a draft economic analysis (DEA) concerning the proposed critical habitat designation, which is available for review and comment (see **ADDRESSES**, above).

#### *Consideration of Economic Impacts*

Section 4(b)(2) of the Act and its implementing regulations require that we consider the economic impact that may result from a designation of critical habitat. To assess the probable economic impacts of a designation, we must first evaluate specific land uses or activities and projects that may occur in the area of the critical habitat. We then must evaluate the impacts that a specific critical habitat designation may have on restricting or modifying specific land uses or activities for the benefit of the species and its habitat within the areas proposed. We then identify which conservation efforts may be the result of the species being listed under the Act versus those attributed solely to the designation of critical habitat for this particular species. The probable economic impact of a proposed critical habitat designation is analyzed by comparing scenarios both “with critical habitat” and “without critical habitat.”

The “without critical habitat” scenario represents the baseline for the analysis, which includes the regulatory and socio-economic burden imposed on landowners, managers, or other resource users potentially affected by the designation of critical

habitat (*e.g.*, under the Federal listing and other Federal, State, and local regulations).

The baseline, therefore, represents the costs of all efforts attributable to the listing of the species under the Act (*i.e.*, conservation of the species and its habitat incurred regardless of whether critical habitat is designated). The “with critical habitat” scenario describes the incremental impacts associated specifically with the designation of critical habitat for the species. The incremental conservation efforts and associated impacts would not be expected without the designation of critical habitat for the species. In other words, the incremental costs are those attributable solely to the designation of critical habitat, above and beyond the baseline costs. These are the costs we use when evaluating the benefits of inclusion and exclusion of particular areas from the final designation of critical habitat should we choose to conduct a discretionary section 4(b)(2) exclusion analysis.

For this particular designation, we developed an incremental effects memorandum (IEM) considering the probable incremental economic impacts that may result from this proposed designation of critical habitat. The information contained in our IEM was then used to develop a screening analysis of the probable effects of the designation of critical habitat for the peppered chub (Industrial Economics, Incorporated (IEC) 2018). We began by conducting a screening analysis of the proposed designation of critical habitat in order to focus our analysis on the key factors that are likely to result in incremental economic impacts. The purpose of the screening analysis is to filter out the geographic areas in which the critical habitat designation is unlikely to result in probable incremental economic impacts. In particular, the screening analysis considers baseline costs (*i.e.*, absent critical habitat designation) and includes probable economic impacts where land and water use may be subject to conservation plans, land management plans, best management practices, or regulations that protect the habitat area as a result of the Federal listing status of the species. The screening analysis filters out particular areas of critical habitat that are already subject to such protections and are, therefore, unlikely to

incur incremental economic impacts. Ultimately, the screening analysis allows us to focus our analysis on evaluating the specific areas or sectors that may incur probable incremental economic impacts as a result of the designation. If there are any unoccupied units in the proposed critical habitat designation, the screening analysis assesses whether any additional management or conservation efforts may incur incremental economic impacts. This screening analysis, combined with the information contained in our IEM, is what we consider our draft economic analysis of the proposed critical habitat designation for the peppered chub and is summarized in the narrative below.

Executive Orders (E.O.s) 12866 and 13563 direct Federal agencies to assess the costs and benefits of available regulatory alternatives in quantitative (to the extent feasible) and qualitative terms. Consistent with the E.O. regulatory analysis requirements, our effects analysis under the Act may take into consideration impacts to both directly and indirectly affected entities, where practicable and reasonable. If sufficient data are available, we assess to the extent practicable the probable impacts to both directly and indirectly affected entities. As part of our screening analysis, we considered the types of economic activities that are likely to occur within the areas likely affected by the critical habitat designation. In our evaluation of the probable incremental economic impacts that may result from the proposed designation of critical habitat for the peppered chub, first we identified, in the IEM dated November 2018, probable incremental economic impacts associated with the following categories of activities: (1) Replacement and maintenance of river crossings and bridges (Federal Highway Administration (FHWA)); (2) construction, replacement, maintenance, or removal of pipelines, or abandonment of pipelines or electrical lines crossing streams (Federal Energy Regulatory Commission (FERC) and U.S. Army Corps of Engineers (USACE)); (3) park maintenance and authorization of recreational activities (U.S. National Park Service (NPS)); (4) operation and maintenance of salinity control programs (Bureau of

Reclamation (USBR)); (5) helium collection or storage (Bureau of Land Management (BLM)); (6) dam maintenance and water releases (USACE); (7) flow maintenance and water withdrawals (USACE); (8) watershed restoration activities (Natural Resources Conservation Service (NRCS), U.S. Forest Service (USFS), Environmental Protection Agency (EPA), Federal Emergency Management Agency (FEMA), and USACE); (9) stream restoration and habitat improvement (NRCS, USFS, the Service, USACE, EPA, and FEMA); (10) pesticide use (USFS, FERC, and FHWA); (11) fish surveys (Service, USFS, and NPS); (12) emergency response activities (FEMA); (13) oil and gas exploration and extraction (USACE); and (14) future reintroduction efforts (Service, NPS, or USFS). We considered each industry or category individually. Additionally, we considered whether their activities have any Federal involvement. Critical habitat designation generally will not affect activities that do not have any Federal involvement; under the Act, designation of critical habitat affects only activities conducted, funded, permitted, or authorized by Federal agencies. If we list the species, in areas where the peppered chub is present, Federal agencies would be required to consult with the Service under section 7 of the Act on activities they fund, permit, or implement that may affect the species. If, when we list the species, we also finalize this proposed critical habitat designation, consultations to avoid the destruction or adverse modification of critical habitat would be incorporated into the consultation process.

In our IEM, we attempted to clarify the distinction between the effects that would result from the species being listed and those attributable to the critical habitat designation (*i.e.*, difference between the jeopardy and adverse modification standards). The following specific circumstances help to inform our evaluation: (1) The essential physical or biological features identified for critical habitat are the same features essential for the life requisites of the species, and (2) any actions that would result in sufficient harm to constitute jeopardy to the peppered chub would also likely adversely affect the



essential physical or biological features of critical habitat. The IEM outlines our rationale concerning this limited distinction between baseline conservation efforts and incremental impacts of the designation of critical habitat for this species.

We have identified and delineated four proposed critical habitat units, totaling approximately 1,068 rmi (1,719 rkm), one of which is currently occupied by the peppered chub and three that are unoccupied but essential to the conservation of the species. The occupied unit (Unit 1) is considered occupied year-round for the purposes of consultation based on current survey data. In the occupied area, any actions that may affect the species or its habitat would also affect designated critical habitat, and it is unlikely that any additional conservation efforts would be recommended to address the adverse modification standard over and above those recommended as necessary to avoid jeopardizing the continued existence of the peppered chub. While this additional analysis in the occupied critical habitat would require time and resources by both the Federal action agency and the Service, it is believed that, in most circumstances, these costs would predominantly be administrative in nature and would not be significant.

Three of the proposed critical habitat units (Units 2, 3, and 4) are unoccupied. We anticipate the incremental impacts of the critical habitat designation to be higher in the unoccupied areas because there are no baseline conservation efforts to consider in those areas where the species is not present. However, large portions of Unit 2 (approximately 238.2 rmi (383.3 rkm)) and Unit 4 (approximately 201.5 rmi (324.30 rkm)) overlap with the designation of critical habitat of a similar species (Arkansas River shiner), and, thus, section 7 consultation would already be triggered in segments of these units.

Federal agencies are the entities most likely to incur incremental costs associated with designating critical habitat, due to section 7 requirements. We do not anticipate any costs to State or local agencies, or impacts on property values related to the public's perception of additional regulation, because we do not expect the designation of critical

habitat for the peppered chub to result in changes to Kansas, New Mexico, Oklahoma, or Texas local regulations (IEc 2018, p. 16).

No more than 153 peppered chub consultations (148 informal and 5 formal) are anticipated in any given year (IEc 2018, p. 16). Proposed Unit 3 (Arkansas/Ninnescah River) has the highest potential costs, due in part to the fact that there is no overlapping critical habitat designation with the Arkansas River shiner in this unit. However, the estimated incremental costs of the total critical habitat designation for the peppered chub in the first year are unlikely to exceed \$900,000 (2018 dollars) (IEc 2018, p. 16). Thus, the annual administrative burden would not reach \$100 million.

As we stated earlier, we are soliciting data and comments from the public on the DEA and all aspects of the proposed rule and our required determinations. We may revise the proposed rule or supporting documents to incorporate or address information we receive during the public comment period. In particular, we may exclude an area from critical habitat if we determine that the benefits of excluding the area outweigh the benefits of including the area, provided the exclusion will not result in the extinction of this species. During the development of a final designation, we will consider any additional economic impact information we receive through the public comment period, and, as such, areas may be excluded from the final critical habitat designation under section 4(b)(2) of the Act and our implementing regulations at 50 CFR 424.19.

#### *Consideration of National Security Impacts or Homeland Security Impacts*

Under section 4(b)(2) of the Act, we consider whether there are lands where a national security impact might exist. In preparing this proposal, we have determined that the lands adjacent to the proposed designation of critical habitat for peppered chub are not owned or managed by the Department of Defense or Department of Homeland Security. We anticipate no impact on national security. However, during the development of a final designation we will consider any additional information received

through the public comment period on the impacts of the proposed designation on national security or homeland security to determine whether any specific areas should be excluded from the final critical habitat designation under authority of section 4(b)(2) and our implementing regulations at 50 CFR 424.19.

#### *Consideration of Other Relevant Impacts*

Under section 4(b)(2) of the Act, we consider any other relevant impacts, in addition to economic impacts and impacts on national security. We consider a number of factors including whether there are permitted conservation plans covering the species in the area such as HCPs, safe harbor agreements, or candidate conservation agreements with assurances, or whether there are nonpermitted conservation agreements and partnerships that would be encouraged by designation of, or exclusion from, critical habitat. In addition, we look at the existence of tribal conservation plans and partnerships and consider the government-to-government relationship of the United States with tribal entities. We also consider any social impacts that might occur because of the designation.

Although we have determined that there are currently no active HCPs, CCAAs, SHAs or other management plans for the peppered chub, we are aware of management plans within the peppered chub's range such as the Arkansas River Shiner (*Notropis girardi*) Management Plan for the Canadian River From U.S. Highway 54 at Logan, New Mexico, to Lake Meredith, Texas (Canadian River Municipal Water Authority, June 2005) and the Recovery Plan for the Peppered Chub (*Macrhybopsis tetranema*) Gilbert, IN, Kansas (Kansas Department of Wildlife and Parks, May 2005). We anticipate no impact on current partnerships or permitted conservation plans from this proposed critical habitat designation.

#### *Tribal Lands*

Several Executive Orders, Secretarial Orders, and policies concern working with

Tribes. These guidance documents generally confirm our trust responsibilities to Tribes, recognize that Tribes have sovereign authority to control tribal lands, emphasize the importance of developing partnerships with tribal governments, and direct the Service to consult with Tribes on a government-to-government basis.

A joint Secretarial Order that applies to both the Service and the National Marine Fisheries Service (NMFS), Secretarial Order 3206, *American Indian Tribal Rights, Federal–Tribal Trust Responsibilities, and the Endangered Species Act* (June 5, 1997) (S.O. 3206), is the most comprehensive of the various guidance documents related to tribal relationships and Act implementation, and it provides the most detail directly relevant to the designation of critical habitat. In addition to the general direction discussed above, S.O. 3206 explicitly recognizes the right of Tribes to participate fully in the listing process, including designation of critical habitat. The Order also states: “Critical habitat shall not be designated in such areas unless it is determined essential to conserve a listed species. In designating critical habitat, the Services shall evaluate and document the extent to which the conservation needs of the listed species can be achieved by limiting the designation to other lands.” In light of this instruction, when we undertake a discretionary section 4(b)(2) exclusion analysis, we will always consider exclusions of tribal lands under section 4(b)(2) of the Act prior to finalizing a designation of critical habitat, and will give great weight to tribal concerns in analyzing the benefits of exclusion.

However, S.O. 3206 does not preclude us from designating tribal lands or waters as critical habitat, nor does it state that tribal lands or waters cannot meet the Act’s definition of “critical habitat.” We are directed by the Act to identify areas that meet the definition of “critical habitat” (i.e., areas occupied at the time of listing that contain the essential physical or biological features that may require special management or protection and unoccupied areas that are essential to the conservation of a species),

without regard to landownership. While S.O. 3206 provides important direction, it expressly states that it does not modify the Secretaries' statutory authority.

Less than 2 miles of tribal lands are included in the proposed designation of critical habitat for the peppered chub. We will consider these areas for exclusion from the final critical habitat designation to the extent consistent with the requirements of section 4(b)(2) of the Act. The Sac and Fox Nation, Cheyenne and Arapaho Tribes, and the Pawnee are the main tribes that may be affected by this proposed rule. We sent notification letters and asked for feedback in November 2018 to the Sac and Fox Nation, the Cheyenne and Arapahoe Tribes, the Southern Plains Regional Office of the Bureau of Indian Affairs, and the Southwest Regional Office of the Bureau of Indian Affairs. We received a response from the Sac and Fox Nation in a letter dated November 20, 2018, and they provided us with negative survey data and a discussion of future activities in the area that may or may not be performed under Federal permits. We will continue to coordinate with the Sac and Fox Nation, as well as any other tribal entity who wishes to provide information to the Service regarding this proposed listing and critical habitat designation. A final determination on whether the Secretary will exercise his discretion to exclude any of these areas from critical habitat for the peppered chub will be made when we publish the final rule designating critical habitat. We will take into account public comments and carefully weigh the benefits of exclusion versus inclusion of these areas. We may also consider areas not identified above for exclusion from the final critical habitat designation based on information we receive during the preparation of the final rule (*e.g.*, management plans for additional areas).

Voluntary conservation approaches or plans that could be implemented by private landowners and others with a vested interest as such that the engagement in conservation actions, such as removal of barriers, retaining quality riparian areas or water conservation activities, would result in direct and indirect benefits to the associated habitat for the

proposed species. The conservation approaches and plans could include a variety of partners, including state and federal natural resource agencies, non-governmental organizations with emphasis on landscape management, local conservation groups with a strategic conservation focus and academia applied research. We may consider areas covered by any conservation actions or conservation plans (such as the Arkansas River Shiner (*Notropis girardi*) Management Plan for the Canadian River From U.S. Highway 54 at Logan, New Mexico to Lake Merideth, Texas or the Recovery Plan for the Peppered Chub, *Macrhybopsis tetranema* Gilbert, IN Kansas) for potential exclusion from the final critical habitat designation.

### **Required Determinations**

#### *Clarity of the Rule*

We are required by Executive Orders 12866 and 12988 and by the Presidential Memorandum of June 1, 1998, to write all rules in plain language. This means that each rule we publish must:

- (1) Be logically organized;
- (2) Use the active voice to address readers directly;
- (3) Use clear language rather than jargon;
- (4) Be divided into short sections and sentences; and
- (5) Use lists and tables wherever possible.

If you feel that we have not met these requirements, send us comments by one of the methods listed in **ADDRESSES**. To better help us revise the rule, your comments should be as specific as possible. For example, you should tell us the numbers of the sections or paragraphs that are unclearly written, which sections or sentences are too long, the sections where you feel lists or tables would be useful, etc.

*Regulatory Planning and Review (Executive Orders 12866 and 13563)*

Executive Order 12866 provides that the Office of Information and Regulatory Affairs (OIRA) in the Office of Management and Budget will review all significant rules. The Office of Information and Regulatory Affairs has waived their review regarding their significance determination of this proposed rule.

Executive Order 13563 reaffirms the principles of E.O. 12866 while calling for improvements in the nation's regulatory system to promote predictability, to reduce uncertainty, and to use the best, most innovative, and least burdensome tools for achieving regulatory ends. The executive order directs agencies to consider regulatory approaches that reduce burdens and maintain flexibility and freedom of choice for the public where these approaches are relevant, feasible, and consistent with regulatory objectives. E.O. 13563 emphasizes further that regulations must be based on the best available science and that the rulemaking process must allow for public participation and an open exchange of ideas. We have developed this rule in a manner consistent with these requirements.

*Regulatory Flexibility Act (5 U.S.C. 601 et seq.)*

Under the Regulatory Flexibility Act (RFA; 5 U.S.C. 601 *et seq.*), as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA; 5 U.S.C. 801 *et seq.*), whenever an agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effects of the rule on small entities (*i.e.*, small businesses, small organizations, and small government jurisdictions). However, no regulatory flexibility analysis is required if the head of the agency certifies the rule will not have a significant economic impact on a substantial number of small entities. The SBREFA amended the RFA to require Federal agencies to provide a certification

statement of the factual basis for certifying that the rule will not have a significant economic impact on a substantial number of small entities.

According to the Small Business Administration, small entities include small organizations such as independent nonprofit organizations; small governmental jurisdictions, including school boards and city and town governments that serve fewer than 50,000 residents; and small businesses (13 CFR 121.201). Small businesses include manufacturing and mining concerns with fewer than 500 employees, wholesale trade entities with fewer than 100 employees, retail and service businesses with less than \$5 million in annual sales, general and heavy construction businesses with less than \$27.5 million in annual business, special trade contractors doing less than \$11.5 million in annual business, and agricultural businesses with annual sales less than \$750,000. To determine if potential economic impacts to these small entities are significant, we considered the types of activities that might trigger regulatory impacts under this designation as well as types of project modifications that may result. In general, the term “significant economic impact” is meant to apply to a typical small business firm’s business operations.

Under the RFA, as amended, and as understood in the light of recent court decisions, Federal agencies are required to evaluate the potential incremental impacts of rulemaking on those entities directly regulated by the rulemaking itself; in other words, the RFA does not require agencies to evaluate the potential impacts to indirectly regulated entities. The regulatory mechanism through which critical habitat protections are realized is section 7 of the Act, which requires Federal agencies, in consultation with the Service, to ensure that any action authorized, funded, or carried out by the agency is not likely to destroy or adversely modify critical habitat. Therefore, under section 7, only Federal action agencies are directly subject to the specific regulatory requirement (avoiding destruction and adverse modification) imposed by critical habitat designation.



Consequently, it is our position that only Federal action agencies would be directly regulated if we adopt the proposed critical habitat designation. There is no requirement under the RFA to evaluate the potential impacts to entities not directly regulated. Moreover, Federal agencies are not small entities. Therefore, because no small entities would be directly regulated by this rulemaking, the Service certifies that, if made final as proposed, the proposed critical habitat designation will not have a significant economic impact on a substantial number of small entities.

In summary, we have considered whether the proposed designation would result in a significant economic impact on a substantial number of small entities. For the above reasons and based on currently available information, we certify that, if made final, the proposed critical habitat designation will not have a significant economic impact on a substantial number of small business entities. Therefore, an initial regulatory flexibility analysis is not required.

#### *Executive Order 13771*

We do not believe this proposed rule is an E.O. 13771 (“Reducing Regulation and Controlling Regulatory Costs”) (82 FR 9339, February 3, 2017) regulatory action because we believe this rule is not significant under E.O. 12866; however, the Office of Information and Regulatory Affairs has waived their review regarding their E.O. 12866 significance determination of this proposed rule.

#### *Energy Supply, Distribution, or Use—Executive Order 13211*

Executive Order 13211 (Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use) requires agencies to prepare Statements of Energy Effects when undertaking certain actions. In our draft economic analysis, we did not find that the designation of this proposed critical habitat would significantly affect energy supplies, distribution, or use. Therefore, this action is not a significant energy action, and no Statement of Energy Effects is required.

*Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.)*

In accordance with the Unfunded Mandates Reform Act (2 U.S.C. 1501 *et seq.*), we make the following finding:

(1) This proposed rule would not produce a Federal mandate. In general, a Federal mandate is a provision in legislation, statute, or regulation that would impose an enforceable duty upon State, local, or tribal governments, or the private sector, and includes both “Federal intergovernmental mandates” and “Federal private sector mandates.” These terms are defined in 2 U.S.C. 658(5)–(7). “Federal intergovernmental mandate” includes a regulation that “would impose an enforceable duty upon State, local, or tribal governments” with two exceptions. It excludes “a condition of Federal assistance.” It also excludes “a duty arising from participation in a voluntary Federal program,” unless the regulation “relates to a then-existing Federal program under which \$500,000,000 or more is provided annually to State, local, and tribal governments under entitlement authority,” if the provision would “increase the stringency of conditions of assistance” or “place caps upon, or otherwise decrease, the Federal Government’s responsibility to provide funding,” and the State, local, or tribal governments “lack authority” to adjust accordingly. At the time of enactment, these entitlement programs were: Medicaid; Aid to Families with Dependent Children work programs; Child Nutrition; Food Stamps; Social Services Block Grants; Vocational Rehabilitation State Grants; Foster Care, Adoption Assistance, and Independent Living; Family Support Welfare Services; and Child Support Enforcement. “Federal private sector mandate” includes a regulation that “would impose an enforceable duty upon the private sector, except (i) a condition of Federal assistance or (ii) a duty arising from participation in a voluntary Federal program.”

The designation of critical habitat does not impose a legally binding duty on non-Federal Government entities or private parties. Under the Act, the only regulatory effect

is that Federal agencies must ensure that their actions do not destroy or adversely modify critical habitat under section 7. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency. Furthermore, to the extent that non-Federal entities are indirectly impacted because they receive Federal assistance or participate in a voluntary Federal aid program, the Unfunded Mandates Reform Act would not apply, nor would critical habitat shift the costs of the large entitlement programs listed above onto State governments.

(2) We do not believe that this rule would significantly or uniquely affect small governments because it will not produce a Federal mandate of \$100 million or greater in any year; that is, it is not a “significant regulatory action” under the Unfunded Mandates Reform Act. The designation of critical habitat imposes no obligations on State or local governments. By definition, Federal agencies are not considered small entities, although the activities they fund or permit may be proposed or carried out by small entities. Consequently, we do not believe that the proposed critical habitat designation would significantly or uniquely affect small government entities. As such, a Small Government Agency Plan is not required.

#### *Takings—Executive Order 12630*

In accordance with E.O. 12630 (Government Actions and Interference with Constitutionally Protected Private Property Rights), we have analyzed the potential takings implications of designating critical habitat for peppered chub in a takings implications assessment. The Act does not authorize the Service to regulate private actions on private lands or confiscate private property as a result of critical habitat designation. Designation of critical habitat does not affect land ownership, or establish

any closures or restrictions on use of or access to the designated areas. Furthermore, the designation of critical habitat does not affect landowner actions that do not require Federal funding or permits, nor does it preclude development of habitat conservation programs or issuance of incidental take permits to permit actions that do require Federal funding or permits to go forward. However, Federal agencies are prohibited from carrying out, funding, or authorizing actions that would destroy or adversely modify critical habitat. A takings implications assessment has been completed for the proposed designation of critical habitat for the peppered chub, and it concludes that, if adopted, this designation of critical habitat does not pose significant takings implications for lands within or affected by the designation.

*Federalism—Executive Order 13132*

In accordance with E.O. 13132 (Federalism), this proposed rule does not have significant Federalism effects. A federalism summary impact statement is not required. In keeping with Department of the Interior and Department of Commerce policy, we requested information from, and coordinated development of this proposed critical habitat designation with, appropriate State resource agencies. From a federalism perspective, the designation of critical habitat directly affects only the responsibilities of Federal agencies. The Act imposes no other duties with respect to critical habitat, either for States and local governments, or for anyone else. As a result, the proposed rule does not have substantial direct effects either on the States, or on the relationship between the national government and the States, or on the distribution of powers and responsibilities among the various levels of government. The proposed designation may have some benefit to these governments because the areas that contain the features essential to the conservation of the species are more clearly defined, and the physical or biological features of the habitat necessary for the conservation of the species are specifically identified. This information does not alter where and what federally sponsored activities

may occur. However, it may assist State and local governments in long-range planning because they no longer have to wait for case-by-case section 7 consultations to occur.

Where State and local governments require approval or authorization from a Federal agency for actions that may affect critical habitat, consultation under section 7(a)(2) of the Act would be required. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency.

*Civil Justice Reform—Executive Order 12988*

In accordance with Executive Order 12988 (Civil Justice Reform), the Office of the Solicitor has determined that the rule does not unduly burden the judicial system and that it meets the requirements of sections 3(a) and 3(b)(2) of the Order. We have proposed designating critical habitat in accordance with the provisions of the Act. To assist the public in understanding the habitat needs of the species, this proposed rule identifies the elements of physical or biological features essential to the conservation of the species. The proposed areas of designated critical habitat are presented on maps, and the proposed rule provides several options for the interested public to obtain more detailed location information, if desired.

*Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.)*

This rule does not contain information collection requirements, and a submission to the Office of Management and Budget (OMB) under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.) is not required. We may not conduct or sponsor and you are not required to respond to a collection of information unless it displays a currently valid OMB control number.

*National Environmental Policy Act (42 U.S.C. 4321 et seq.)*

It is our position that, outside the jurisdiction of the U.S. Court of Appeals for the Tenth Circuit, we do not need to prepare environmental analyses pursuant to the National Environmental Policy Act (NEPA; 42 U.S.C. 4321 *et seq.*) in connection with designating critical habitat under the Act. We published a notice outlining our reasons for this determination in the *Federal Register* on October 25, 1983 (48 FR 49244). This position was upheld by the U.S. Court of Appeals for the Ninth Circuit (*Douglas County v. Babbitt*, 48 F.3d 1495 (9th Cir. 1995), cert. denied 516 U.S. 1042 (1996)). However, when the range of the species includes States within the Tenth Circuit, such as that of the peppered chub, under the Tenth Circuit ruling in *Catron County Board of Commissioners v. U.S. Fish and Wildlife Service*, 75 F.3d 1429 (10th Cir. 1996), we undertake a NEPA analysis for critical habitat designation. We invite the public to comment on the extent to which this proposed regulation may have a significant impact on the human environment, or fall within one of the categorical exclusions for actions that have no individual or cumulative effect on the quality of the human environment. We will complete our analysis, in compliance with NEPA, before finalizing this proposed rule.

#### *Government-to-Government Relationship with Tribes*

In accordance with the President's memorandum of April 29, 1994 (Government-to-Government Relations with Native American Tribal Governments; 59 FR 22951), Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments), and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. In accordance with Secretarial Order 3206 of June 5, 1997 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act), we readily acknowledge our responsibilities to work directly with tribes in developing programs for healthy ecosystems, to acknowledge that tribal lands are not subject to the same controls as Federal public lands, to remain sensitive to

Indian culture, and to make information available to tribes. In a letter dated September 7, 2017, we informed the Tribal leadership of nine (Pueblo of Cochiti, Pueblo of Isleta, Pueblo of Jemez, Pueblo of Tesuque, Pueblo of Zuni, Hopi Tribe, Jicarilla Apache Nation, Mescalero Apache Tribe, and the Navajo Nation) Tribal nations near or within the range of the peppered chub in the State of New Mexico, of our intent to conduct a status assessment for the peppered chub. In a letter sent October 18, 2017, we informed all Tribal entities in the State of Oklahoma of our intent to conduct a status assessment. In a letter dated November 6, 2018, we sought the input of the Sac and Fox Nation and the Cheyenne and Arapaho Tribes of Oklahoma for their input on the potential economic impact of designating critical habitat for the peppered chub. We received a response from the Sac and Fox Nation providing input for a potential critical habit designation. We will continue to work with Tribal entities during the development of a final rule for the designation of critical habitat for the peppered chub.

### **References Cited**

A complete list of references cited in this proposed rule is available on the Internet at <http://www.regulations.gov> and upon request from the Arlington Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

### **Authors**

The primary authors of this proposed rule are the staff members of the Fish and Wildlife Service's Species Assessment Team and the Arlington Ecological Services Field Office.

### **List of Subjects in 50 CFR Part 17**

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

## Proposed Regulation Promulgation

Accordingly, we propose to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

### PART 17—ENDANGERED AND THREATENED WILDLIFE AND PLANTS

1. The authority citation for part 17 continues to read as follows:

AUTHORITY: 16 U.S.C. 1361–1407; 1531–1544; and 4201–4245, unless otherwise noted.

2. Amend § 17.11(h), the List of Endangered and Threatened Wildlife, by adding an entry for “Chub, peppered” in alphabetical order under FISHES to read as follows:

#### § 17.11 Endangered and threatened wildlife.

\* \* \* \* \*

(h) \* \* \*

Common name	Scientific name	Where listed	Status	Listing citations and applicable rules
* * * * *	* * *			
FISHES				
* * * * *	* * *			
Chub, peppered	<i>Macrhybopsis tetranema</i>	Wherever found	E	[ <i>Federal Register</i> citation when published as a final rule]; 50 CFR 17.95(e) <sup>CH</sup> .
* * * * *	* * *			

3. Amend § 17.95(e) by adding an entry for “Peppered Chub (*Macrhybopsis tetranema*)” in the same alphabetical order as the species appears in the table in § 17.11(h), to read as follows:

#### § 17.95 Critical habitat—fish and wildlife.

\* \* \* \* \*

(e) *Fishes.*

\* \* \* \* \*

Peppered Chub (*Macrhybopsis tetranema*)



(1) Critical habitat units are depicted for Quay County, New Mexico; Hemphill, Moore, Oldham, and Potter Counties, Texas; Clark, Comanche, Cowley, Kingman, Pratt, Sedgwick, and Sumner Counties, Kansas; and Blaine, Caddo, Canadian, Cleveland, Creek, Custer, Dewey, Ellis, Grady, Harper, Hughes, Kay, Kingfisher, Logan, Major, McClain, Payne, Pontotoc, Pottawatomie, Roger Mills, Seminole, Woods, and Woodward Counties, Oklahoma, on the maps in this entry.

(2) Within these areas, the physical or biological features essential to the conservation of peppered chub consist of the following components:

(i) Unobstructed river segments greater than 127 river miles (205 river kilometers) in length that are characterized by a complex braided channel and substrates of predominantly sand, with some patches of silt, gravel, and cobble.

(ii) Flowing water with adequate depths to support all life stages and episodes of elevated discharge to facilitate successful reproduction, channel and floodplain maintenance, and sediment transportation.

(iii) Water of sufficient quality to support survival and reproduction, which includes, but is not limited to, the following conditions:

(A) Water temperatures generally less than 98.2 °F (36.8 °C);

(B) Dissolved oxygen concentrations generally greater than 3.7 parts per million (ppm);

(C) Conductivity generally less than 16.2 microsiemens per centimeter (mS/cm);

(D) pH generally ranging from 5.6 to 9.0; and

(E) Sufficiently low petroleum and other pollutant concentrations such that reproduction and/or growth is not impaired.

(iv) Native riparian vegetation capable of maintaining river water quality, providing a terrestrial prey base, and maintaining a healthy riparian ecosystem.

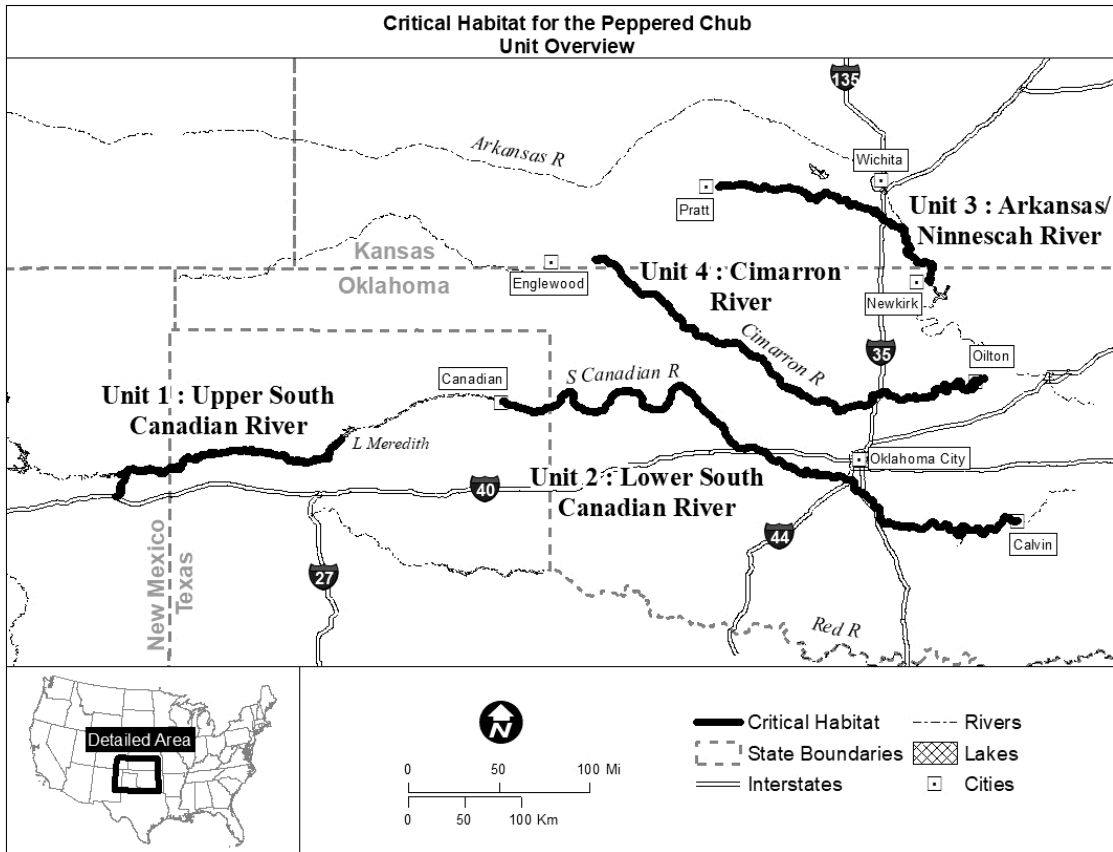
(v) A level of predatory or competitive, native or nonnative fish present such

that peppered chub population's resiliency is not affected.

(3) Critical habitat does not include manmade structures (such as buildings, aqueducts, runways, roads, and other paved areas) and the land on which they are located existing within the legal boundaries on the effective date of the final rule.

(4) *Critical habitat map units.* Data layers defining map units were created using fish distribution data provided by State agencies and sourced on the FishNet2 online database. Hydrologic data for stream reaches were sourced from the U.S. Geological Survey online database. The maps in this entry, as modified by any accompanying regulatory text, establish the boundaries of the critical habitat designation. The coordinates or plot points or both on which each map is based are available to the public at the Service's Internet site at <https://www.fws.gov/southwest/es/ArlingtonTexas/> and at <http://www.regulations.gov> under Docket No. FWS-R2-ES-2019-0019 and at the field office responsible for this designation. You may obtain field office location information by contacting one of the Service regional offices, the addresses of which are listed at 50 CFR 2.2.

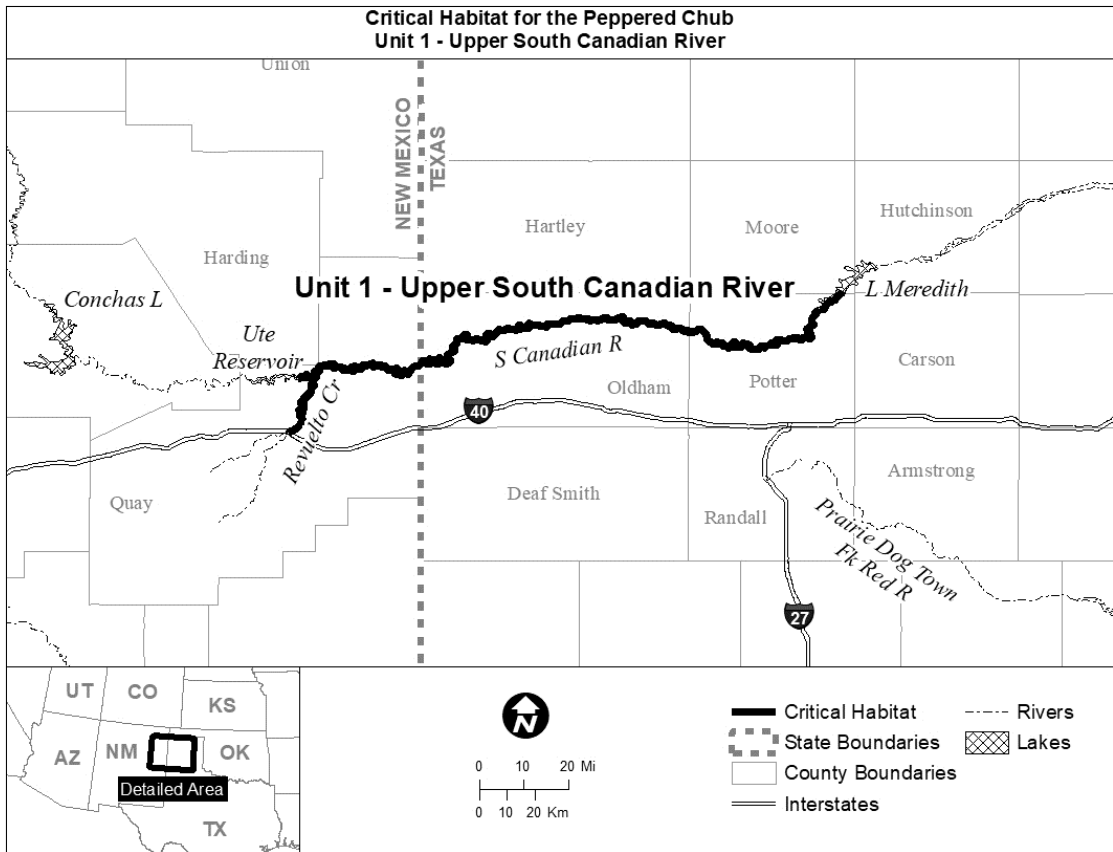
(5) *Note:* Index map follows:



(6) Unit 1: Upper South Canadian River, New Mexico and Texas.

(i) This unit consists of approximately 197.16 river miles (317.29 river kilometers) of occupied habitat in the South Canadian River from Revuelto Creek at Interstate 40 in New Mexico downstream to the inundated portion of Lake Meredith in Texas. Unit 1 includes river habitat up to bank full height.

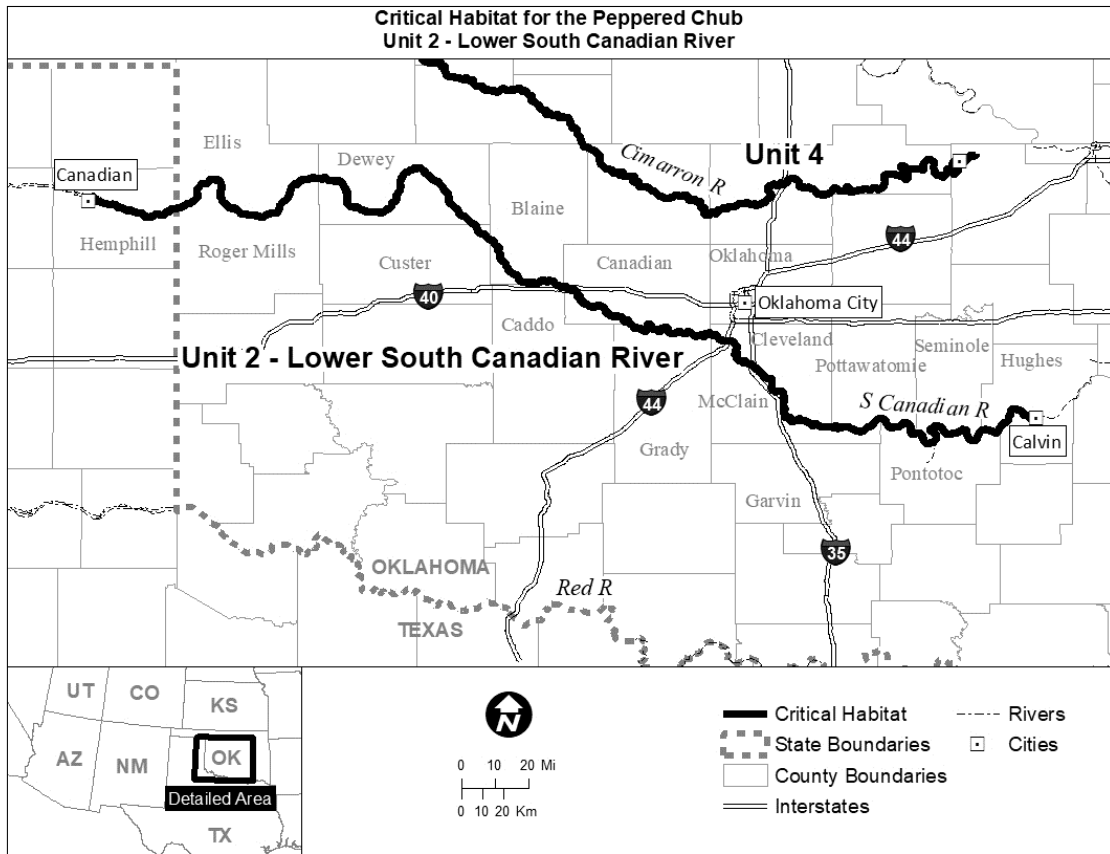
(ii) Map of Unit 1 follows:



(7) Unit 2: Lower South Canadian River, Texas and Oklahoma.

(i) This unit consists of approximately 400.01 river miles (643.86 river kilometers) of unoccupied habitat in the lower portion of the South Canadian River from the U.S. 83 bridge north of Canadian, Texas, downstream to the U.S. 75 bridge northwest of Calvin, Oklahoma. Unit 2 includes river habitat up to bank full height.

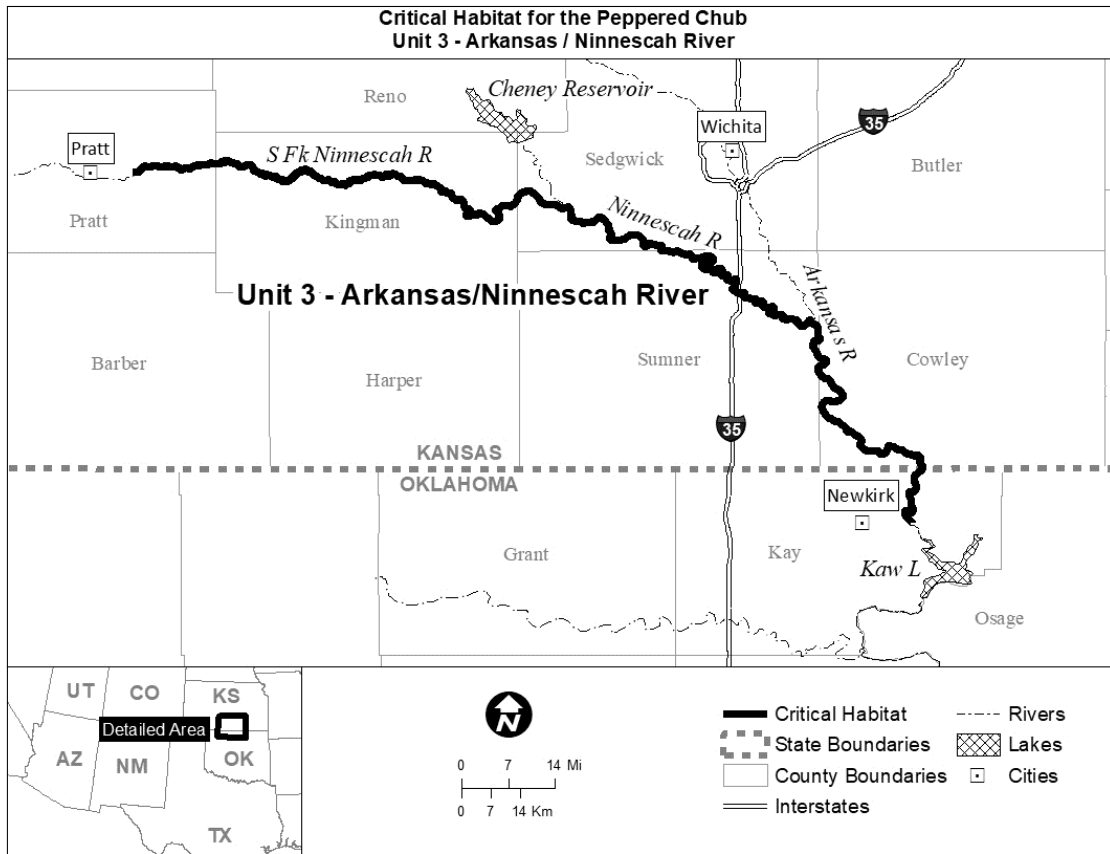
(ii) Map of Unit 2 follows:



(8) Unit 3: Arkansas/Ninnescah River, Kansas and Oklahoma.

(i) Unit 3 consists of approximately 178.96 river miles (288.02 river kilometers) of unoccupied habitat in portions of the Ninnescah River and the Arkansas River, originating at U.S. 400 bridge east of Pratt, Kansas, and extending downstream to River Road Bridge east of Newkirk, Oklahoma. Unit 3 includes river habitat up to bank full height,

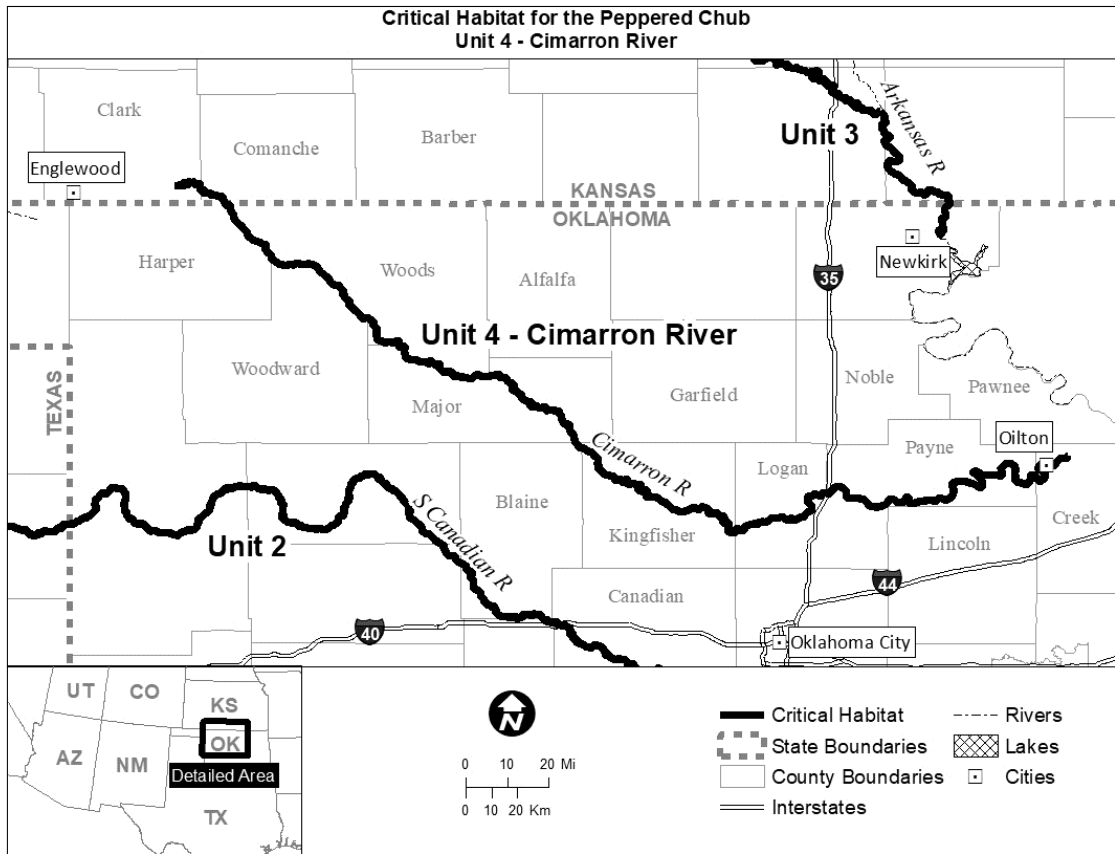
(ii) Map of Unit 3 follows:



(9) Unit 4: Cimarron River, Kansas and Oklahoma.

(i) This unit consists of approximately 291.82 river miles (469.63 river kilometers) of unoccupied habitat from the U.S. 183 bridge east of Englewood, Kansas, downstream to the OK 51 bridge northeast of Oilton, Oklahoma. Unit 4 includes river habitat up to bank full height.

(ii) Map of Unit 4 follows:



\* \* \* \* \*

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**Aurelia Skipwith**

*Director,*

*U.S. Fish and Wildlife Service.*

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